INSTITUTE FOR AEROSPACE STUDI

UNIVERSITY OF TORONTO

AEOSR = TR = 72 = 1278.

AD 744508

/3 3⁵1

NEAR-FREE-MOLECULE FLOW CALCULATIONS-MONTE CARLO STUDY OF SKIMMER INTERACTIONS

N.A. Derzko

bv

UTIAS

October, 1971.

Reproduced by NATIONAL TECHNICAL INFORMATION SERVICE US Depoilment of Commerce Springfield VA 22151

, 1

UTIA: Technical Note No. 169

	· · · · ·	I		
	1	v	· ·	
i	INCLASSIT ID			
	Scourity Classification			PA
1	DOCUMENT CON (Security classification of title, body of abstract and indexing	FROL DATA - R&	D prod when the overall report is classi	lied)
•	1. OPIGINATING ACTIVITY (Co Jorate author)	1	. REPORT SECURITY CLASSIFICA	TION
	INSTITUTE FOR AEROSPACE STUDIES	·	5. GROUP	
• •	TORONTO 5, ONTARIO, CANADA			
	A. REPORT TITLE		·	
;	NEAR-FREE-MOLECULE FLOW CALCULATIONS-MON	TE CARLO STUDY	OF SKIMMER INTERACTIO	ns
• 1	4. DESCRIPTIVE NOTES (Type of report and inclusive dates)			:
	Scientific, Interim		ا میں اور	
• •	S. AUTHORISI (Filer neme, middle initiel, lest neme)	• •		
	N A DERZKO	ł		
1	A REPORT DATE	7. TOTAL NO. OF 1	AGES 76. NO. OF REFS	
	A CONTRACT OF GRANT NO.	90. ORIGINATOR'S	EPORT NUMBER(S)	
1 1	AFOSR - 1481-68	UTTAS T.N.	NO. 169	
	A. PROJECT NO.			
	9753-01 H	95. OTHER REPORT	NOIS) (Any other numbers that may b	e essigned
	681307	this reporty .	AFUSR = TR = 72 = 1	278
	d.			
•	11. SUPPLEMENTARY NOTES TECH, OTHER	12. SPONSORING ME AF Office of 1400 Wilson	LITARY ACTIVITY f Scientific Research Boulevard	(NAM)
•	· · · · · · · · · · · · · · · · · · ·	Arlington,	Virginia 22209	
	13. ABSTRACT	; `		
;	1	:		
،	The Monte Carlo simulation method study of flow through a skimmer u ratios, and Knudsen numbers. The sample of 3500 hard sphere molecu function profiles in each of 25 p profile at the downstream end of	l of G. A. Bird using various a computer prog ules, accumulat regions of the the flowfield	was applied to the cometries, speed ram followed a ting distribution flowfield, the beam and the mass flow	
1	through the skimmer orifice. The the order of .3 of the no skimmer numbers of Ol and demonstrate cle occurs from 0 to 4 mean free path	e results show r interaction is early that most as upstream of	beam intensities of alue at Knudsen of the interaction the orifice.	
			1	
·		· 1	· •	
-		ı	•	•
			: . •	
	,	• • •	•	
		•		
			Î	
		, ,		
		, ,	i	
	DD FORM 1473	``````````````````````````````````````		

:

UNCLASSIFIED

A.		LINK	A	LINK	8	LIN	(<u>c</u>
	KEY WORDS	ROLE	WT	ROLE	WT	ROLE	WT
SKIMMER INTERACTI	on.						
MONTE CARLO SIMUL	ATION			•			•
BOLTZMANE EQUATIO	N						
MOLECULAR BEAM							
				l I			Į
				ĺ			
							ľ
			/				
		UNC		'IED			<u></u>
•	1.6		Securit	y Classi	ication		

NEAR-FREE-MOLECULE FLOW CALCULATIONS-MONTE CARLO STUDY OF SKIMMER INTERACTIONS

by

N. A. Derzko

1

ic

Submitted March, 1971.

!

1

1

「おおおおおおおおおおおおおおおおおおおおおおようかいです こう、そうできないがいいい」

محدقة أحمر وتلتخط ملاح

October, 1971.

UTIAS Technical Note No. 169

ł

*** * ***

الملاقدين والمراجعة

the second second

77

٤.٠	• -						•
 	•••	• • • • • • • • • • • • • • • • • • •	•		1.7.*	:;	4
	·	•:	•	•		1	

ACKNOWLEDGEMENTS

I am indebted to Dr. G. N. Patterson and to Dr. J. H. deLecuw for the part they have played in suggesting and assisting this project, and to J. Kesten for programming assistance in its early stages. This work was supported by the U. S. Air Force Office of Scientific Research under Grant No. AF-AFOSR-68-1481A.

SUMMARY

いたい たいないないかい たまいいたい きしたいない というたいき たいちょう

The Monte Carlo simulation method of G. A. Bird was applied to the study of flow through a skimmer using various geometries, speed ratios, and Knudsen numbers. The computer program followed a sample of 3500 hard sphere molecules, accumulating distribution function profiles in each of 25 regions of the flowfield, the beam profile at the downstream end of the flowfield, and the mass flow through the skimmer orifice.

The results show beam intensities of the order of .3 of the no skimmer interaction value at Knudsen numbers of Ol and demonstrate clearly that most of the interaction occurs from O to 4 mean free paths upstream of the orifice.

TABLE OF CONTENTS

Acknowledgements	
INTRODUCTION	1
Description of Program	2
 Method Initial Conditions One Iteration Geometry Stock Splitting TCONS Incoming Distribution Boundary Conditions Referencing Molecule List Simulating an Actual Experiment Output Format 	2 2 2 2 3 3 4 5 6 6 7
RESULTS	7
TABLE 1	9
TABLE 2	10
FIGURES	
Appendix 1, Program Listing 2, Typical Output 3. No Interaction Beam Intensity	

iv

1

Link adding

- 24 BY

PAGE

INTRODUCTION

This report deals with part of the work we have been doing during the past three summers on the development and testing of a number of computer programs designed to simulate molecular flow problems in the transition regime. The simulation is done with hard sphere model using the Monte Carlo nethod developed by G. A. Bird (2).

We describe here its application to the study of the flow through a skinner under conditions similar to those involved in the production of molecular beams of high intensity and speed ratio. We simulate the flow which occurs in a cylindrical region reaching upstream and downstream of the skinner but not including the nozzle.

Since its proposal by Kantrowitz and Grey in 1951, the free jet-skimmer combination has proved far superior to the older methods using the effusive flow from an orifice in an oven source. Nevertheless, in practice the intensity of a beam produced in this way is substantially lower than that one would obtain if the skimmer just removed the portion of the free jet around the beam region that is, did a perfect job. Considerable experimental work has gone into studying the nature and causes of this effect. Recently Govers, LeRoy and Deckers (b) have studied the effects of background scattering on skimmer interaction; Bossel, Huribut, and Sherman (3) have done experiments to study the magnitude of the skimmer interaction for various geometries and jets.

The effect of the skimmer interaction, whatever its nature, is quite clear If the plots beam intensity in particles per sec. per steradian vs nozzle skimmer separation, the graph starts at a low value for small separation, intreases to a maximum and then drops rapidly as the separation exteeds the distance to the Mach disc (Fig. 4, p. 994, 6). More or less successful attempts have been made to correlate the large amount of experimental data available to enable one to describe a given situation with a fairly small number of parameters. With skimmers of similar geometry, the ratio of mean free path to skimmer crifice diameter appears to be significant. Roger Campargue (4) has discussed a number of dimensionless quantities relevant to the nozzle beam apparatus.

The theory associated with a nozzle beam divides naturally into three areas:

- (a) Description of the free jet that is the density, velocity, and speed ratio at every point downstream of the nozzle.
- (b) Skimmer interaction.
- (c) Development of the beam downstream of the skimmer (assuming that any molecules involved in skimmer interaction leave the beam).

A satisfactory theory for (a) was published by Ashkenks and Sherman in $9\pi^{4}$ (1). A number of authors have also adequately studied (c), e.g. Zapata et al in 1960 (3). A summary appears in Hagena and Morton (7). Thus fail (b' has eluded a satisfactory theoretical discussion. It is the purpose of this work of shed some light on this dark area in the theory of nozzie beams. an a labor to the forther the

DESCRIPTION OF THE PROGRAM

\$1. METHOD USED

The Monte Carlo method used in this study of skimmer interaction is basically the method of G. A. Bird which has been described by him in a number of ; publications, for example (2). We include a short description here for sake of completeness and to enable us to explain the changes we have introduced to accommodate the peculiarities of this problem.

Bird's method is a Monte Carlo Algorithm for constructing a statistical sample of given size N of the the molecular paths occurring in some finite regions of an actual flow. The construction process is an imitation of what occurs in nature, at least insofar as probability distributions are concerned. The particle paths are functions of time, so that at any instant only the N coordinates in phase space (position, velocity-space) appear in computer memory. A time counter T is also kept in memory.

During each iterate of the calculations T is advanced by a preset quantity DTM (actually a number DT approximately equal to DTM) and the coordinates in the molecule list are updated.

§2. INITIAL CONDITIONS

The initial sample is from a distribution based on what we would have if the skimmer absorbed every molecule which hit it. Actually, the initial distribution is of secondary importance since experience has shown that the molecule list approaches the correct steady state distribution in relatively few iterations.

As soon as T reaches a preset value TEQ (time at which steady flow is assumed to have been achieved) date collection for subsequent output is begun and continues until T reaches TEND. Following output the program automatically stops or does the next case.

§3. ONE ITERATION

Each iteration has two components:

(a) Changes to molecule list due to collision.

(b) Changes to molecule list due to convection.

The computation of (a) requires that the flow region be divided into cells (Fig. 2) in such a way that the distribution function remains fairly constant over each cell. At any moment the molecules residing in a given cell constitute a sample from the distribution for that cell. If these molecules are allowed to collide among themselves then these collisions are representatives of the collisions actually taking place in the given cell. The theory backing this procedure is stronger than the above suggests. We refer to Bird's original papers on the subject.

The details of the collision process are as follows: A pair of molecules is chosen in such a way that the probability of being chosen is propertional , to the relative velocity. If ∇_a and ∇_b are the velocities of the pair chosen, they are replaced according to the hard sphere collision law with ∇_a , ∇_b , where $\vec{\nabla}_{a} = 1/2[\vec{v}_{a} + \vec{v}_{b} - |\vec{v}_{b} - \vec{v}_{a}| \vec{n}]$ $\vec{\nabla}_{b} = 1/2[\vec{v}_{a} + \vec{v}_{b} + |\vec{v}_{a} - \vec{v}_{b}| \cdot \vec{n}],$

- 3'-

where \overline{n} is chosen from the uniform distribution on the unit sphere.

The position coordinates remain unchanged and a time parameter DT is advanced by

$$DDT = \frac{TCONS!}{n^2 |\vec{v}_b - v_a|}$$

The number TCONS is fixed for each cell and is explained in $\xi 6$. Collisions are computed for a given cell until

$$DT + DDT > DTM.$$

DTM' - DT

The last collision is kept with probability

and ignored otherwise. This last refinement is essential here because some cells have such low collision frequencies that no collisions at all should be computed during some intervals DTM.

The computation of (b) is basically simple. The position coordinate, are translated on the basis of the time interval DTM and velocities. The computation involves some work because we use cylindrical coordinates in the program in which the translation equations are nonlinear. We have had to introduce two additional complications which do not appear necessary at first sight - referencing the molecule list \$9' - and stock splitting \$5. At the end of the collision convection cycle T is incremented appropriately and the whole process is repeated.

194. I GEOMETRY

Since the skimmer problem has cylindrical symmetry about the cormon axis of the free jet and the skimmer, two coordinates suffice to specify position - the axial and radial. They are denoted by (x,y) in the program (rather than (z,r)as is customary because essentially the same program with a few changed subroutines can be used in Cartesian coordinates). The velocity coordinates (u,v,w) are with respect to the Cartesian frame $\overline{i}, \overline{j}, \overline{k}$ where \overline{i} is in the axial direction, \overline{j} is in the radical direction and \overline{k} is in the direction of increasing θ . The actual region of the flow under study is the solid of revolution generated by the shape in Fig. 1.

The flow region is subdivided into cells as required in the collision calculation. The 25 cells and the parameters necessary to specify the geometry are marked in Fig. 1. These parameters are kept in common area (GEON) (see Appendix 1). Some of them must be specified initially (see Block Data subprogram) and the rest are computed in subroutine SETUP.

15. STOCK SPLITTING

If the coordinates in computer memory simply constituted a sample of the molecular coordinates in an actual flow, we should find that their density in the x,y-plane 'increased linearly with x. This would be unsatisfactory because then most of the computation would be done for the region for from the axis whise

the statistical scatter for the beam region containing only a small number of molecules would render these results almost useless.

The solution we have adopted to this difficulty involves subdividing the flow region into a number of subregions, using the streamlines of the flow to construct the boundary surfaces whenever possible. The subregions are then assigned weights in such a way that a simulator molecule in a subregion far from the axis "represents" several times as many "real" molecules as one in an axial region. For programming reasons we have found it convenient to make the weights inversely proportional to the representation mult_ples, so that the subregions farthest from the axis have the lowest weights.

Such an arrangement calls for a special strategy when a molecule happens to move between subregions of different weights. The strategy is this: When a molecule moves from a weight W_1 region to a weight W_2 region, it is replaced with

INTR(W5/Wi)

identical molecules. The random variable INTR is defined as follows:

INTR (α) = [α] with probability 1- α +[α] [α] + 1 with probability α -[α]

where $[\alpha]$ denotes the greatest integer less than or equal to α as is customary. We have called this process "stock splitting".

\$6. TCONS CALCULATION

The original formula of G. A. Bird for the time advance per collision is $DDT = 2\Omega_{\kappa}/(a,n_{\kappa})$ where Ω_{κ} , n_{κ} , a_{κ} are respectively the volume, total number of simulator molecules, and cross-section per simulator molecule for cell κ , and vis the relative velocity of the collision pair. When the cells are weighted then a_{κ} must be inversely proportional to the weight. That is if the weights are w_{κ} , then

 $a_y w_y = \text{const} = \lambda.$

The additional requirements on a in an actual calculation are

- (1) The cross-section density in a specified region of the flow is given (see §10).
- (2) The total number of molecules must be in the vicinity of some N_{o} smaller than the capacity of the molecule list.

Let us say N_0 is the number of molecules obtained in the flowfield if the skimmer caused no disturbance, i.e. absorbed everything that hit it. Let A_{κ} be the total cross-section ((cross-section/molecule) x number of molecules) in cell 5. A_{κ} can be computed from the free jet structure and the cross section density A_{κ} at the skimmer orifice (subroutine VPOL). Then

$$N_{\kappa} = \frac{A_{\kappa}}{a_{\kappa}} = \frac{A_{\kappa}W_{\kappa}}{\lambda}$$

- 5 -

and

 $N_{O} = \frac{1}{\lambda} \frac{\Sigma}{\kappa} A_{K} w_{\kappa} ,$

so that

$$\lambda = \frac{1}{N_{o}} \Sigma A_{\kappa} W_{\kappa}$$

and

$$TCONS(\kappa) = 2\Omega_{\kappa} / a_{\kappa} = 2\Omega_{\kappa} w_{\kappa} N_{0} / \Sigma A w , DDT = \frac{TCONS(\kappa)}{n_{\kappa}^{2} v}$$

§7. THE INCOMING DISTRIBUTION

First the total influx rate CU to the flow region from the jet is computed from the jet cross-section density A_e at the entry point, its velocity v (taken = 1 in our units) and the weights of the cells receiving the molecules. The total entering cell κ (assuming all k borders on the entry plane) is

$$\frac{A}{e} \frac{v}{k}$$
 x area of entry surface element.

CU is the sum of all such quantities.

The number entering the fl w region during time DT is CU x DT. Each entering molecule has its position coordinates chosen at random in accordance with the Ashkenas-Sherman formula [1] for variation of jet density with distance from the axis

$$\frac{\rho(\mathbf{R},\theta)}{\rho(\mathbf{R},0)} = \cos^2 \quad \left(\frac{\mathbf{T} \ \theta}{2\phi}\right)$$

and the weight of the cell about to receive the molecule. The details of this calculation appear in subroutine INPUT (Appendix 1).

\$8. BOUNDARY CONDITIONS

The boundaries in question are the skimmer wails and the artificial boundaries introduced to enclose the flow field. A molecule colliding with a skimmer has a choice of being reflected or reemitted from a cosine distribution at a specified temperature CR. The probability of reemission is a specified accommodation coefficient ACCOM.

The artificial boundaries are:

- (1) The entry plane,
- (2) The upstream outer boundary,
- (3) The downstream boundary.

Molecules which collide with (1) and (3) are deleted. If a molecule collides with (2) its velocity vector is reflected and augmented by the vector 2pn where n is the outward normal to the wall the p is a specified constant. If the resulting velocity vector points out of the region the molecule is deleted; otherwise it

۱.

is allowed to reenter. When p is roughly equal to the normal component of the average velocity of the molecules crossing the wall, its net effect is to simulate no discontinuity in the flow due to the boundary.

\$9. REFERENCING THE MOLECULE LIST

We discuss here the actual arrangement of the molecule coordinates $C_d = 1,2,...$ in computer memory consistent with a fast method for referring to the coordinates corresponding to a given cell.

The list is arranged in such a way that

are in cell 1,

are in cell 2, etc. The numbers NI are stored in an auxiliary list called MAP. The basic operations which must be performed on this list are

(1) Removal of a molecule, and

(2) Addition of a molecule.

(1) To remove C_{α} where $N_{i-1} < \alpha \leq N_i$, store C_{N_i} in place of C_{α} , C_{N_i} in place of C_{N_i} , etc. until the end of the list is reached.

(2) To insert coordinates C into cell i we make room for it by storing the first molecule of each cell in the location following the last molecule, starting from the end and going up to cell i + 1. This leaves location N + 1 for C.

Of course, in each case MAP is updated to reflect the new configuration.

It is clear that a simple transfer of molecule from one cell to another does not require the operations to go to the end of the coordinate list. A time saving procedure to accomplish this task is incorporated into the program.

\$10. SIMULATING AN ACTUAL EXPERIMENT

The program takes the limiting mean centreline jet velocity to be 1. All other velocities are given in terms of it. The simulator geometry must be similar (in the geometric sense) to the real geometry, but the units are arbitrary. Once the velocity and the distance unit are fixed, the time unit is automatically determined. Since we are mostly concerned with the steady state we do not even need to compare computed times with real times except in the initial approach to the steady state.

The remaining parameter that .ust be assigned is the cross section density A at some reference point : the flow which we have chosen to be the skimmer orifice assuming perfect skimming. A has units of reciprocal length, in fact it is just a multiple of 1/mean free path. Thus Ad, where d is the skimmer orifice diameter is dimensionless, and we give it the same value in the simulator as it has in the experiment.

Though this prescription is simple, it has its problems, not the least

being that the hard sphere cross section of real molecules depends on their relative velocity. The best we can do is to use, some sort of average relative velocity. The realtive velocity of the beam and the molecules coming off the skimmer wall is a good candidate because this is when most of the collisions take place.

511. OUTPUT FORMAT

The output from each run contains the following information (see Appendix 2).

- (1) A printout of DT and MAP for each interval DIM for checking purposes.
- (2) A flow density profile at the skimmer orifice as well as a total particle flow rate.
- (3) A flow density profile at the far downstream end of the flowfield as well as the total particle flow rate through the geometrical beam area. This last figure is useful in estimating the centreline beam intensity
- (4) Histograms for the integrated distribution function profiles /fdvdw, /fdwdu, /fdudv for each cell.

The distribution function is broken down into the distribution function of the molecules which have not undergone collision in the flowfield and the remainder. The mean velocity, mean square velocity, and mean number of molecules are also given along with a theoretical comparison number for no skimme: interaction. The histograms are obtained by time averaging regular observations of the flowfield for the duration of the computation after equilibrium is reached

RESULTS

A simulator program such as this one should be viewed rather like any experimental facility suitable for investigating a range of problems connected with the skimmer. We describe here the results of a study of skimmer interaction.

A preliminary study was done to check a model proposed by French (5) suggesting a significant interaction downstream of the skimmer orlince. This was done in a program which preceded the present one by making the downstream skimmer wail absorbing. No downstream effect was observed. A check of the distribution functions in the present study supports this conclusion.

In fact this study shows that the skimmer interaction is caused by a screen of molecules originating from the wall and from collisions extending approximately one mean free path upstream of the skimmer orifice. The supporting material for this conclusion is contained in the following graphs and tables

Table i shows the cases computed in this study.

Fig. i defines the geometric variables in the program and Figs 2 - 4 give the specific geometries used in the calculations.

Table 2 shows condition near the skimmer wall for an associment of cases. It is most significant that for all but the sharpest skimmer (angles 50° , 40° ; the flow is subsonic. We suspect there is always a subsonic region close to the skinner wall which is very thin for small angles but grows rapidly as the angle increases. Also the surface interaction with the skinner plays a significant role, since case 23 (ACCOM = 0) gives a high Mach number even for a blunt skinner.

Fig. 5 shows the mass flow rate through the skimmer orifice vs A in terms of the theoretical no interaction value. The mass flow is less than one in all cases computed but shows a tendency to go to 1 in the cold skimmer and no lip cases.

Fig. 6 shows beam intensity vs A. The importance of the skimmer lip sharpness is here clearly indicated. The skimmer angle seems to have less effect than the skimmer temperature. Though the general shape of the experimental beam intensity vs Knudsen number curves is evident, our results do not show decreases in intensity as strong as those in [3] for instance.

Figs. 7, 8 show mass flow and beam intensity vs various parameters. It is most interesting that an increase in PRES which leads to a decrease in the, number of molecules entering the flowfield through the outer upstream boundary leads to a decreased mass flow but no significant change in beam intensity. Furthermore, a low accommodation coefficient gives high values in both graphs.

Figs. 9, 10 were obtained by smoothing the histograms produced by the program. It is clear that a Knudsen number of 1/2 (A = 4) leads to more or less complete destruction of the beam by skimmer interaction.

Figs. 11, 12 show clearly a sharp increase of molecules having a bread i districution function and infiltrating the beam region between Knudsen numbers 1/2 and 1.

Finally a note on the standard deviation of the results. The beam intensity and mass flow curves have a relative standard deviation of between 3% and 5%. It follows from the theory of Monte Carlo simulators that the probability distribution of each value obtained is normal. Accuracy is expensive in these calculations. A fourfold increase in computing time would cut the standard deviation in half. TABLE 1

.;

CASES	COMPUTED

·	C	HARACT	ERISI	NG PARA	METERS	, i			COMMENTS
	A	SIA	CR :	PRES	ACCOM	THLIP	i GE	M	
, 1 2	0.5	0.1 0.1	1. 1.	1.	0.5 0:5	; 0.1 0.1	``` <u>`</u> 3 3		Sharp skimmer
3 `	2.	0.1	1.	1.	0:5	0%1	: 3	•	:
4	4.	091	1.	1.	0"5	0,1	3	'	1
5	2.	0.1	1	2.	0.5 😁	0.1	1		Effect of PRES
¹ 6	ຸ 2.	0.1	1.	1.5	0.5	0.1	l		1
7	2.	0.1	1.	0.75	0.5	0.1	i		·
8	2.,	0.1	1.	0.5	0.5	0.1	1	t	•
9	2. (0.0546	1.	1.	0.5	:0.1 .	1		High mach number
10	1.	0.1	1.	2.,	015	0.1	1		Absorbing walls
11	0.5	0.1 :	0.5	1.	0.5	0.1	· 1		Cold skimmer series
12	1. 1	0,1	0,5	1.	0.5	0.1	1	:	
13	2.	0.1	0.5	1.	0.5	0.1	1		
14	: 4.	9.1	0.5	1.	0.5	0.1	l		
15 ·	0.5	Ó.1	. 1,	1.	0.5	0.1	1		Standard series
· 16	1.0	0.1	1.	1.	0.5	0.1	1	;	· blunt skimmer ·
17	2.0	0,1	1.	1.	0.5	0.1	1		
· 18	4.0	0.1;	1.	· 1.	0.5	0.1	. 1		
י 19	0.5	0.1	, 1. ;	1.	0,5	0.0	1		Perfect edge .
20	1.0	0.1	1.	1.	0.5	0.0	1		
21	2.0	0.1	1.	, 1. '	0.5	0.0	1		ī
' 22	4.0	0.1	1.	l,	0.5	0.0	1	1	
23	2.	0.1	1.	1.	0.	0.1	1	,	Effects of surface
. 24	2. '	0.1	1.	1.	1.	0.1,	1		interaction
25	0.5	0.1	1.	1.	0.5	0.1	2		Intermediate angle
26	1.	0.1	1.	1.	0.5	0.1	, 2		
27	2.	0.1 .	1.	1.	: 0.5	0.1	2		.;
· 28 ·	L.	0.1	. 1.	1 '_	0.5	0.1	2		

<u>Notes</u>

A vs Knudsen number Kn

, 1

 $\frac{A}{Kn} = \frac{0.5}{4} + \frac{1}{2} + \frac$

SIA, CR, PRES, ACCOM, THLIP are explained in Appendix ...

いていることにあっていた。

GEC.4 1, 2, 3 are shown in Figs. 1, 2, 3 respectively.

pa 🇯

- 10 -

TABLE 2

CONDITIONS IN FRONT OF SKIMMER

CELL 14

CELL 15

Cage	Mean Speed	Mach #	Mean Speed	Mach #	Inclination
15 [~]	0.55	0.64	0.51	0.55	0.83
18	0.52	0.79	0.34	0.44	0.69
5	0.62	0.88	0.48	0.57	0.52
8	0.33	0.44	0.28	0.34	0.73
1	0.80	i.4	0.72	1.2	0.28
4	0.86	2.1	0.71	1.	0.32
23	0.87	2.2	0.75	2.3	0.62
25	0.68	1.0	0.60	0.82	0.43
28	0.71	1.3	0.53	0.73	0.47

- 1. H. Ashkenas and F. S. Sherman, The Structure and Utilization of Supersonic Free Jets in Low Density Wind Tunnels, p. 84, Supplement 3, Rarified Gas Dynamics, New York, 1969.
- 2. G. A. Bird, Direct Simulation Monte Carlo Method, p. 85, Vol. 2, Supplement 5, Rarifield Gas Dynamics, New York, 1969.
- 3. U. Bossel, F. C. Hurlbut, and F. S. Sherman, Extraction of Molecular Beams from Nearly Inviscid Free Jets, p. 945, Vol. 2, Supplement 5, Rarified Gas Dynamics, New York, 1969.
- 4. R. Campargue, Dimensionless Number Linked to Background and Skimmer Jet Interaction in Nozzle Beam Generation, p. 1003, Vol. 2, Supplement 5, Rarified Gas Dynamics, New York, 1969.
- 5. J. B. French, AGARD ograph 112 (N.A.T.O.) April 1966.
- T. R. Govers, R. L. LeRoy, and J. M. Deckers, The Concurrent Effects of Skimmer Interaction and Background Scattering on the Intensity of a Supersonia Molecular Beam, p. 985, Vol. 2, Supplement 5, Rarified Gas Dynamics, New York, 1969.
- Hagena, and Morton, Analysis of Intensity and Speed Distribution of a Molecular Beam from a Nozzle Source, p. 1370, Supplement 4, Rarified Gas Dynamics, New York, 1969.
- 8. I. N. Zapata, H. M. Parker, and J. H. Bodine, Performance of a Supersonic Molecular Beam, p. 67, Supplement 1, Rarified Gas Dynamics, New York, 1969.











-15-



FIG. 5 MASS FLOW THROUGH SKIMMER UNDER VARIOUS CONDITIONS

--16 -





-18-

Fishicketer



-19-



FIG. 9 FLUX DENSITY AT SKIMMER ORIFICE (GEOM=2)

Distance from Axis

-20-





COMMENTS

A. The Variables

Common Area

/RCRD/

urpose

Storage area for beam and orifice profile histograms. BPRFL and HPRFL resp. DBPR and DHPR are the widths of the histogram cells in each case.

/GEOM/

Geometrical definition of the flow field - see Fig.

A1-1

/NPRFL/

For internal'use in the program to save computer time in the introduction of molecules through the input plane.

/CONS/

CU is the total number of molecules entering the flow field through the input plane per unit time, SIA is the speed ratio, in the jet, CR is a speed defining the temperature of the skimmer walls, ACCOM is the accommodation coefficient, PRES is related to the pressure on the upstream outer boundary, CLWT is the list containing the cell weights, TCONS is the list of time advance per collision constants for the cells. The remaining variables are for internal use of the program to save recomputing frequently used numbers. They are initially computed in SETUP.

/BEGIN/

BE and BG are initial values for the sequencing variables of the random number generators. A is the cross section density at the orifice, and NST is starting number of simulator molecules in the flow field.

/TIME/

т

- Accumulated time variable for the program.

- DT Weighted time per iteration (DT~DTM).
- DTM Preset time allowance per iteration.
- TEQ Value of T for which equilibrium is assumed to have been achieved.
- TEND Value of T at which computation ceases and output is begun.

The remaining variables were not actually used in this program.

/STORE/

NCL is the number of cells, MCP = 5000, and MAP is for purposes of referencing the list of molecules. The remaining variables in this common area constitute the molecular list.

/HIST/

/SW/

Storage area for the histograms FU etc; CFU etc; the mean velocity vectors for each cell - UB etc. and the mean square velocity vector for each cell UUB -CORG counts the number of molecules in each cell which have undergone more than one collision.

Contains control parameters for the data collection operation.

:-23-

A1-2

- /RAND/ Contains the sequencing parameters for the random number generators.
- /VARS/ Temporary storage area for one molecule to save address computation time while the molecule is being processed.

B. Subroutines

- MAIN This program is used to set up the cases. Each call to PROG constitutes the computation of one case.
- BLOCK DATA Used to assign values to variables which are common to the computation of many cases.
- PROG Control program for the computation of one case.
- SETUP Computes variables not assigned in MAIN or BLOCK DATA and performs all the initialization necessary to begin computation of a case.
- VPOL Computes cell volumes and cell masses for the undisturbed free jet.
- INPR Sets up an array used to obtain the input profile by interpolation.
- LOC Function which computes the cell containing the coordinates (x,y). LOC works by computing a word IX which has 0 or 1 in the k-th bit depending on which side of the k-th boundary (x,y) is found. Then IX is compared with a standard ordered list (MASK, 1DFR).
- COLI Collision increment for cell L.
- SQM Estimates the maximum relative velocity in a given cell.
- TRBKP "Translate and Book-keep". This subroutine essentially controls computation of the convection increment.
- INVRS Computes the cell number L of the M-Th molecule in the molecule list.
- UP, DOWN Used in inserting, deleting or moving molecules in the molecule list.
- TRS, TR Transfer of coordinates.
- FRP Checks a given molecule for collision with boundaries and it moves it a distance appropriate to the time DT.
- TRANS Changes coordinates of a given molecule appropriate to the time interval DT.
- LCHK Checks whether collision occurs with a given boundary.
- EMIT Emits a fully accommodated molecule in the direction C.S.

REFL Reflects a molecule in the direction C,S.

INPUT Introduces CU and DT molecules through the input plane on the basis of the input profile defined by FNPR, DFNPR.

-24-

CBSFL	Cubic Spline interpolation subroutine.
TABU	Controls the accumulation of histograms and moments of the distribution function.
FIT	Inserts molecule at cell L.
SIFT	Auxiliary subroutine to accumulate histograms.
INTR	See §5.
RANDG	Standard normal random number generator.
RANDL	Uniform on [0,1] random number generator.
RANDR	Uniform on [-1,1].
UMAX	Finds the maximum element in an array.
ISGN	ISGN(X) = 1 if x : 0) 0 otherwise
DUMP.	Controls the output function of the program.
BAR	Sets up one histogram bar for printing.
HISTI	Sets up one histogram for printing.
HIST3	Sets up and prints the 3×3 histogram describing the distribution function in cell L.

.

A1-3

- 25-

APPENDIX I

.

PROGRAM LISTING

JEAUT SYSTE OD a	CONNOL /VARS/ 10. VO. TH. VN. IN. VN. PH. 1.IN
TIMMON /KCAD/ DAVE, OHPH , APREL (50) . MPHEL (10)	COMMON /NCRO/ DAFA, OMPR. MPREL(50), MPREL(10)
CINHON //FON/ PFI.DISNS.DIANS.THLIP.SLO.SLI.TCAI,TCB2.TCA3.SC44.	N = H =
X SLO1, SLO2, SLO3, SLO4, SLO5, SLO3, SLO3, SLO3, SLO4, WADIN, DISMI, XHI, YHI,	TeQ.
X XH(1. YHO. XHS. YHS. YOL (25). YWD(25)	CALCULATION OF GEONE IRICAL CONSTANTS
COMMON /ONS/ CULSIA.SIA.CA.CT.ACCOM.MRES.CLWT(26).TCUMS(25)	¥(R]=(),/>+/)#F` ¥(R]=(),/>+/)#F`
CIMMON /AFGIN/AR+HG+4+HST	DHPR+0,]+* CR7
COMMON /TIME/ 1.01.01W.TED.DISW.TEND.DISW.TREP	YCA3=YCA2+ THL 1P YCA4=111AMS
10150001	YCHSALAMS
CUMMON /HIST/ FUE10.251.FVE10.251.FWE10.251.CFUE10.251.CFVE10.251.	V(RA=2,5+0]AMS
1CFW(10,25).(IR(25).VR(25).WR(25).(H)R(25).VVR(25).WWR(25).(DR((25). //WWDW./SW2.WSAM.WRED	{};{};{};{};{};{};{};{};{};{};{};{};{};{
COMPON /HAND/R.G	SL 14+0, 5+SL 13
C(MMMM /VARS/ XII. YD. XM. YM. LM. YM. MM. LUM	St 12+2+\$113
ANTITUS	<u>\$L1[+2_+\$L[2</u>
Af-1745	5102+3,4510
NST=1000	\$113*¥CA4/01\$\$0\$
DTSH+1.	\$105+77 H #7155+5
THEN O	HADIN+YCHS+TLIS+FCAL
078##1.	¥(#\$#{¥(#K-¥(#3)/{\$ 0=\$ 05) ()###=+{#{/\$0
A(((M+0, 5	#{ H()+{ Y(H/-Y(H3)/S) ()
N(1=25	#FRE-(YCM7-YCM2)/511
N()** 4000 *******************************	XMA=String/MAN
TFNI)+12.	YN5=/HYP
\$[A+.]	MYM=SokII1_+SLO+SLO)
514+0.1	ANII-1* /HAH
ACCOM=0.5	HYP+50kT(]+51]+51])
A77, WESSO, 5	
PHF 5= 1.	CONTANTS FOR INPUT DENSITY PROFILE
ACCOM+1.	/NPH(1)=0.
CAII-PRDG(1-1)	/*************************************
PHF 5:1.	7NPH143+5113+XCA1+YCA2
Arc.114+0.5	/NPK(5)+/NPR(4)
Star0.47	/NPH(1)+/NPH(2)
St Ivo a	/NPRENJ+5804##CR1+YCR5
A+0.5 CALL PROGRAM	/NPR(4)=/NPR(A) /NPR(1)=RAN1M
A+ 2.	DIMENSION JUTEIO)
CALE PHOREL.I	DATA_INT_/1+1+2+2+11+11+13+13+10+16/
CALS PROF(1.))	CALL INPRIFADE TNURLESS
A+4,	1+ IW2(2)
(A) (PROG(1,1)	FMPH([]+F+CIWT(])
FWD	FAPRILIMAR (FAPR - 10)
ALIER DATA	00 501 1+1+10
	· ; · · · · · · · · · · · · · · · · · ·
X SETTASETASERO, XCRO, XCRO, XCRO, YCRO, YCRO, YCRO, YCRO, YCHA, YCHA, YCRO, C X SETTASETASETASETASETASE SETTASETASE RADINODISMI, XMI, YMI, Y MIL MAR MAR MAR MAR ING NASAMARY	11 mm (1) 11 mm (1) 11 mm (1) 11 mm (1) (1) 11 mm (1) mm (1) 11 m
X \$11.517,XCAO,XCA1.XCA5,YCA1.YCA2.YCA3,YCA4,YCA4,YCA4,YCA7,YCA7, C X 5101.5107,5107,5104,5104,5104, 5113,5114, RAD'N+DISML, XM1,YM1, X XM1,YMD, XM5,YM5, YOH1251,9WD1253 (A1A PF171.574,015M577,07,507,614M570,5547,1M11P70,17,51770,937,	V(1)WF(1)F()WF(1)/FWF(42) V(1)WF(1)FF(4)/V(42) XV1(1)*X(4)
X (111-5112-2500,2501-2505,2701-2502-2503-2504,2704-2507,270 X (111-5112-510-5504,510-5505,5113-5114-2019,01541, 241-241, X 2411, 240, 245-240,251,24012-51,24012-51,2401-251,240,251,251,251,251,251,251,251,251,251,251	1 0F
X (111-5172,200,920,1,220,576,970,1,540,270,270,3720,64,744,574,574,777,777,777,777,777,777,77	1 07777411277886413278864 11194844144 xv1(42),vv1(42) xv1(1)+sx(4) xv1(2)-sx(4) xv1(4)+sx(4)
X (111-5112-2000-200-200-200-200-200-200-200-200	1 07 07 04 11 27 04 04 11 27 04 04 11 104 04 14 04 04 14 22 04 04 04 201 144 04 14 04 04 14 22 04 04 04 201 14 14 14 14 14 14 14 14 14 14 14 14 14
X (111-5117-2500,7551,250,5761,5763,5764,5764,5764,5764,5764,5767,577,577,577,577,577,577,577,577,57	1 07 07 07 01 17 07 07 07 17 17 07 07 07 07 07 07 07 07 07 07 07 07 07
X (111-5112+2CAN, ECA1.2(A5.9(CA1.9(CA2.9(1 0 (1 = 0
X (111-5172,200,300,300,300,300,300,300,300,300,30	1 0 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
X (111-5112-2500, 250, 250, 250, 270, 270, 270, 270, 270, 270, 270, 27	1 0 (1) (1) (1) (0) (1) (1) (0) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1
X (111-5112-2500,250,512,812,80,370,1-750,2-750,3-750,4-750,4-750,570,570,570,570,570,570,570,570,570,	1 0 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
X (111-5112-2500,850,850,970,1-750,2-750,270,4-750,470,4-750,757, X (111-5112-510,510,510,5113,514,870,57,101,70,17,170,47,57,170,47,110,47,170,470,170,170,170,170,170,170,170,170,170,1	<pre>vi inw (inwinki (i))/www ni inw (inwinki (i))/www ni inw (inwinki (i))/www avtici (i))/www. avtici (i) (i)/www. avtici (i))/www. avtici (i))/wwwwww. avtici (i))/www. avtici (i))/wwwwwwwwwwwwww</pre>
X (111-5112-2200, 200, 200, 200, 200, 200, 200, 20	<pre>1</pre>
X (111-5112-2000,200,512,512,512,52,52,52,52,52,52,52,52,52,52,52,52,52	<pre>v(1)w(1)/v(k)(1)/v(k) v(1)w(1)/10k u)=v(1)v(1)v(1)v(1)v(1)v(1)v(1)v(1)v(1)v(1)</pre>
X (111-5(1)2+2CAN, ECR. 2(CR, YCR.)-YCR.)-YCR.)-YCR., YCH., YCH., YCR., (X (111-5(1)2+2CAN, YCL.)-(X X11), YHO, XH5, YHO, S(1)3+2(1)4+ RANIN, DISHL, XH1, YH), X X11/0, 1/2(CR)/2-1/1/2(CR)/0, YC, PICA, SYC, 1H1 [P/0,1/-5(7)/0, U/. X (14/10+1/+2CA)/2-3/2, PICA, PICA, YCR, YCL, YCL, YCL, U/. X (14/10+1/2CD)/3, YC, 0/2-3/2, YCL, YCL, YCL, U/. (14/10+1/2CD)/3, YC, 0/2-3/2, YCL, YCL, YCL, U/. (14/10+1/2CD)/3, YC, 0/2-3/2, YCL, YCL, YCL, YCL, YCL, YCL, YCL, YCL	1 0 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
X (11-5(1)/2, 2000, 2004, 2004, 2004, 2004, 2006	<pre>vi iim (imministrati))/success iim (imministration) iim vi iim (imministration) iim vi iim (imministration) iim vi iim (imministration) iim vi iim iim vi iim (imministration) iim vi iim iim vi iim (imministration) iim vi iim iim (imministration) iim (immin</pre>
X (11)-5(1)-2(CAN-SCALS(CAS-YCALS(CAS-YCALS(CAS-YCAS-YCAS-YCAS-YCAS-YCAS-YCAS-YCAS-Y	<pre>vi iim (imministrati))/www. vi iim (imministrati)/www. vi iim (imministration) vi ii = stail vi ii = stail vi</pre>
X S(1)-S(1)-2;CCAN, ECR.)-2[A, 3(CR, YCR.)-YCR.)-YCRA, YCRA,	<pre>v(1)w(1)/v(k(1)/)w(k(1)/)w(k(2)) v(1)w(1)/(1)w(1)/(2) v(1)v(k(1)/(2))v(1(2)) v(1)v(1)v(1)v(1)v(1)v(1)v(1)v(1)v(1)v(1)</pre>
X (111-5(112-2CAR, ECR.) 2CR.) 7CR.)	i) (i)
X (11)-(11)-(12,2(AN,2(A),2(A),2(A),2(A),2(A),2(A),2(A),2(A)	1 0.00000000000000000000000000000000000
X (11)-5(1)/2*(CANP.SCAL.SCAN.YCAL.YCA2.YCA2.YCA2.YCA2.YCA2.YCA2.YCA2.YCA2	1 0.00000000000000000000000000000000000
X (11)-5(1)/2*(CAN,*CAL*(**********************************	i) (i) (i) (i) (i) (i) (i) (i) (i) (i) (
X S(1)-S(1)-Z(CAN-XCA:X(AS,YCA:-YCA:-YCA:-YCA:-YCA:-YCA:-YCA:-YCA:-	1 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0 +
X (11:51)2;200;200;200;200;200;200;200;200;200;2	1 0.00000000000000000000000000000000000
x St11sSt12sZCMSSZCMSSZCMSSYCMSSYCMSSYCMSSYCMSSYCMSS	<pre>vi inw (inwinistant))/such injetx(i)/vitx(i)/j/such injetx(i)/vitx(i)/(vitx(2)) xv(i)/six(i) xv(i)/six(i) xv(i)/six(i) xv(i)/six(i) xv(i)/six(i) xv(i)/six(i) xv(i)/six(i) xv(i)/six(i)/si</pre>
X S(1)-S(1)-2-2CAN-SCAL-SCAL-SCAL-SCAL-SCAL-SCAL-SCAL-SCAL	1 0.1.0000000000000000000000000000000000
X S(1)-S(1)-2-2CAN-SCAL-SCAL-SCAL-SCAL-SCAL-SCAL-SCAL-SCAL	1 0.00000000000000000000000000000000000
X (11)-5(1)/2+2CAN_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL	1 0.00000000000000000000000000000000000
X (11)-5(1)/2+2CAN_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL	<pre>vi inw (inverting)/secting/sector vi inw (inverting)/secting/sector vi inverting) vi inverting vi invert</pre>
x GillsGillsGillsGillsGillsGillsGillsGill	1 0.00000000000000000000000000000000000
X (111-5112-2500,9500,9500,9500,9700,9700,970,970,970,970,970,770,970, X S(111-5112,5(10,5(10,5),5(10,5),5(15,5),5(10,10,10,10,10,10,10,10,10,10,10,10,10,1	1 0.00000000000000000000000000000000000
X (111-5(112-25(AP, 25(A), 25(A), 27(A), 27(1 0.00000000000000000000000000000000000
X (11)-5(1)/2+2CAN_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL	1 0.00000000000000000000000000000000000
x S(1):S(1):Z(200,2(0);S(1):S(1):S(1):S(1):R(1):R(1):V(1);S(1):S(1):R(1):R(1):R(1):V(1);S(1):S(1):R(1):R(1):R(1):R(1):R(1):R(1):R(1):R	1 0.00000000000000000000000000000000000
X (11)-5(1)/2+2CAN_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL_SCAL	<pre>in more in provide in provide in more in provide in provide in the set in provide in provide in the set in the intervention of the set in the set in the intervention intervention intervention in the set in the s</pre>
X (111:5172;25(A);25(A);25(A);27(A);	<pre>vi inv vi i</pre>
X (111-51)2,2500,260,270,270,270,270,270,270,270,270,270,27	1 0.00000000000000000000000000000000000
X (111-5(1)2,25(A),25(A),27(A)	1 0.00000000000000000000000000000000000
X (111-5(1)2,2CAN,2CA1,2CA5,27CA1,27CA2,27CA3,27CA44,27CA444,27CA44	<pre>vi inv vi i</pre>
<pre>X {{1}.5{1}.5{1}.2.2.CAN_2.CAL_2.YCAL_2.YCAL_YCAL_YCAL_YCAL_XCAL_YCAL_XCAL_YCAL_YCAL_YCAL_YCAL_YCAL_YCAL_YCAL_Y</pre>	<pre>v v v v v v v v v v v v v v v v v v v</pre>

.

	YVT(%)=YCA2+*113+XVT(%)		NISIERS
	YVT(1))=YCA2+S(134XYT(1)) YVT(1)=YCA2+S(134XYT(1))		F=() _e Ve()
	YVT(26)#YC9245(13#ZVT(26)		NI 1 [=1.WV
	YVT(33)+YCR2+51,13+XVT(33)		N(=N(T)
	YVT(4))=YC22+SLI3+YVT(40)		
	YVT(4)=YCR4+SIN3*XVT(4)		fi jun(j)
	TVILY PT1,844511348VILY VUT1171-VFR4		ReC+J{NJ}
	YV1(5)=YCR5+SLO44XVT(5)		DzeR-A
	YVT(#)=YCR5+SLO4#XVT(#)		IF(ARS(DX)-LT-1.F-3) GD TO 1
	YV1(1H)=YCA5+SLO4+XV1(1A)		<u>Set (((N J) - Y (N I)) / OX</u>
	YV[[37]=Y[A7 VV[[4]-V-VCB4451[05AVV[]4]]		(12(A+T(N))++(F-)////A
	YVT(7)=YCRA+SLOSPZVT(7)		FJ=(FRH(A)+FHH(A))/2.
	YV1(14)=YCAA+SINS+XVT(14)		D() 2 K=1.9
	¥¥1120}=¥CRA+SLOS#X¥T(20)	,	F1=F1+F11H(A+K=DX)
			P=P=P = [0 [X V=V=1, 047 28 (V (N1) 8 # 2 + V (N1) 8 + V (N)] 8 + 7] 6 (X (N1) - X (N 1))
	TV1(23)=7(#3+11#KV1123) VUT(23)=VCR3+S1N#KV1123}	ć	1.0472+91/3
	AA1(5))=ACW3+210+XA1(5))		FM=3.14159*C*C*F
			AhOF*A
	YV1(24)=YCR2+S1 [#XV1(29)		RETIRN
	YVTI 3A) +YT 824 SI [4XVT(3A)		SUAROUTINE INPR(F.DF.R)
	YV1(2R)=YC42+5(1]=XV1(2H)	C	SKIMMER 1970
	YVT(3))=YCA2+51]+XVT(3))		COMMON /GENM/ PFI-DISHS-DIAMS-THEIP-SLO-SLI-SCHI-SCHI-SCHI-SCHI-SCHI-SCHI-SCHI-SCH
	YV [(3 H) = Y(F) + (] + X Y [3 H}		X SUII-SUI2-SUDA, SUDA, SUDA, SUDA, SUIA-SUIA-SUIA-SUIA-SUIA-SUDA-SUDA-SUDA-SUDA-SUDA-SUDA-SUDA-SUD
	VVT(32)+V(R2+SL124XVT(32)		X XNO, YHO, XH5, YN5, VOL(25)
	YVT(34)=YCR2+5(12+XVT(39)		A=ATAN(R/DISNI)
	VOL(1)=VPNL(XVI,VVT.4.12.11.2.1.0.015N5.VWD11))		A7=7.4A
	VULTZ 1+VPDL(XVT+VVT+4,11+10+3+2+0+015M5+VWD(2))		#F#FF1#A WA=1.+fn5(A2)
	40144 Jeven(1841-441-4-14-12-10-11-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-		WRw1.+COSLAP)
	VOL15)=VPOL(XVI,YVT,4,24,25,14,13,0,015545,VH01511_		MEMA#NR
	VOL (A]= VPOL (XVI. 4, 25. 26. 15. 14.0. UISHS, VHD(6))		F#R#W
	VILLT JEVPAL(XVT,VVT,4,35,34,25,24,0,015N5,VWD(7))		17487715N276775N24775725N247752 1755557275N24751N257295784849518247518247528
	VIL 1		RETINN
	VIN (10) = VPOL (XVT. VVT. 4.41.40.33.34.0.1) [SNS. VND(10))		FND
	VIL(11)+VVIL(XVT-VVT+4+10-9+4+3+0+015+5+V40(11))		
	WH (12)+ WPOL (XVT, VVT, 5, 15, 16, 23, 9, 10, 615% S. VWD(12))	C	NKIMMER 1970 INTEGEL TANTANTCOTONTENTENTENTINTINTUNIKOTIN TMOTNOTP
	#14 + 27 ##FTL + #FT + ## + ## + ## + ## + # + ## + ##		CIMMON /GEOM/ PFI.DISNS.DIAMS.THLIP.SLO.SLI.XCRI.XCR2.XCH3.XCH4.
	WH (15)=WMI (XVT.4.27.27.18.17.0.01 545.WH0(15))		X SLI1.SLI2.XCRO.XCRI.XCRS.YCR1.YCR2.YCR3.YCH4.YCR5.YCR4.YCR7.
	VII (14)=VPOL(XVT,VVT,4.R.7.6.5.0.015NS.VND(16))		X 5101+5107+5103+5104+5105+ 5113+5114+ KADIN+DISNI+ XHI+YHI+
	VII (1/)+VVIL(XVT.VVT.4.P.18.19.7.0.01545.VWIL17))		X XW(), YW(), XW5, YW5, V() (75)
	412 (18) - 4941 (241, 741, 5, 77, 71, 20, 19, 14, 14, 15, 480(18))		DIMENSION TOFR(25)-MASK(25)
	VIN (20)+VVN (XVI.4433.33.32.27.26.0.0[SMS.VVN(20)]		EDNIVALENCE (LIDER(1), IDEN(1)), (LMASH(1), MASK(1)).
	WIN (21)=WMII (XVI-VVI-4-40-39-32-33-0-DISHS-WWD(21))		X ([X.]X]. (L]XM.]XM)
	VIL (22)-VMIL (XVI.VVI.4.32.31.28.27.0.11545.VMI)(22))		DATA WASK/210021+210073+78021+78023+76001+2003+76001+7600+47 5001+
	VN (23) + VMN (XVI, 4, 39, 38, 31, 32.0, DI SAS, VWN (23))		x / 3003+/100/h-/R0Ah+/100/1+/h00+/1+/1003h+//h+220013
	VII (29)*V/II (XV1+TV1+9+51+30+27+28+115395+112395) WAL251+WAL241+TV1+9+51+32+32+30+21+01585+WAL2511		A 10FW/ 210001.210002.221.222.2C001.7C002.72001.22002.71001.71002.
c	FND OF VOLUME COMPLICATION		x 710004.244.21000H.72#.2C#.210010.730.2200.24100.
	NC 1 1-1-14 Tyu-tyu-vun(1)=CLut(1) Tu-2 ta-2		X 14/27/.TA/24/.TC/28/.TO/210/.TF/20/.TF/240/.TG/280/. X TH/2100/.T1/2200/.J2400/.TF/280/.TC/280/. X TH/2100/.TU/22000/.J8/21000/
 1 2	N() [-]-]A TVW-TVW-VWN(])OCLWT([]) H) 2 [=]-25 YWN([])=WST/TYW	3	X 14/12/.TA/24/.TC/28/.TN/210/.TF/220/.TF/240/.TG/280/. X 14/2100/.T1/2200/.TJ/2400/.TK/2800/.TL/21000/.TM/22000/. X 14/2400/.TI/28000/.T221000/ IX= TSCMS15149XX7011-Y) + TABISGN(SL139X+YCR2-Y)
 1 2	MD 1 1-1-1A TWW-TWW-WM(1)+CLWT(1) TWJ 2 1-1-25 Ywn(1)+WM(1)+WST/TWW RD 201 1-1-MCL	3	X 1A//2/.TA/24/.TC/28/.T0/210/.TF/720/.TF/740/.TG/280/. X 1H/2100/.T1/2200/.TJ/2400/.TK/2800/.TL/21000/.TM/22000/. X 1H/2400/.T1/28000/.TP/210000/ Ix- ISCHISLI40X+YCH-Y) + TA*ISCHISLU4*YCR2-Y) X + ISCHISLI40X+YCH+Y) + TC*ISCHISLU4*XYCR5+Y)
1 2 201	00 1 1=1-14 TWV-TWV-VW0(1)+CLUT(1) TW) 2 1=1,25 VW0(1)+VW0(1)+W0(1)+MST/TVW N) 201 1=1,400 TCUMS(1)+2,4610AT(WST)+V(0,1)+CLWT(1)/A/TVW	3	X 1A/22/.TA/24/.TC/28/.TO/210/.TF/220/.TF/240/.TG/280/. X TH/2100/.TI/2200/.TJ/2400/.TK/200/.TF/240/.TG/280/. X TH/2100/.TI/2800/.TJ/2400/.TK/2000/ IX- TAFISGHISL14484YEHI-Y) + TAFISGHISL144YER2-Y) X + TAFISGHISL1054YER4-Y) + TCFISGHISL144YER3-Y) X + TAFISGHISL1054YER4-Y1 + TCFISGHISL144YER3-Y1 X + TAFISCHISL054YER4-Y1 + TCFISGHISL142YEYER3-Y1
1 2 . 201	M1 1 1-1.18 TVW-TVW+VWD(1)*CLUT(1) 14) 2 14) 2 1+1.25 VMT(1)*VWD(1)*MST/TVW 12(MS(1)*CLUT(1)/A/TVW M1 201 1+1.40Ct C(MS(2) 2.45(AT(MST)*V/B_(1)*CLUT(1)/A/TVW C(M-00- 11.25	3	X 14/22/.TA/24/.TC/28/.TN/210/.TF/220/.TF/240/.TG/280/. X 14/2100/.T1/2200/.12/2400/.TK/7800/.1L/21000/.TM/22000/. X 14/2100/.T1/28000/.12/210000/ 1x- 15(KK)5103ext(H1-Y) + TA=15(KK)5L13ex+YCR2-Y) X + TN=15(KK)5103ex4YCR4-Y) + TC=15(KK)5L04exeYCR3-Y) X + TN=15(KK)5103ex4YCRA-Y) + TC=15(KK)12ex+YCR3-Y1 X + TP=15(KK)5103exYCRA-Y) + TC=15(KK)12ex+YCR3-S10ex) X + TP=15(KK)5103exYCRA-Y) + TC=15(KK)(Y+YCR3-S10ex)
1 2 201	N() 1 [=]=18 TVW-TVW-VWN(])=CLWT(]) N() 2 [=]=75 VM(]]=VWN(]]=WST7TVW N() 20] [=]=MC(TC(WS(])=7=0=1:0AT(WST)=V(0;[]]=CLWT(]]]A/TVW C()=0. N() 202]=]=5 N() 202]=]=5 N() 202]=]=5	3	X 1A/22/.TA/24/.TC/28/.T0/210/.TF/20/.TF/240/.TG/280/. X TH/2100/.T1/2200/.TJ/2400/.TK/2800/.TL/21000/.TM/22000/. X TH/2100/.T1/28000/.TJ/21000/ Tx 15(KK15L148xFY(H1-Y) + TA*156k(5L13#X+YC82-Y) X + TA*156K(5L105#X+YC8A-Y) + TC*156K(5L02*X+YC82-Y) X + TA*156K(5L05#X+YC8A-Y) + TC*156K(5L02*X+YC82-Y) X + TA*156K(5L05#X+YC8A-Y) + TC*156K(YC47-Y) X + TA*156K(15L05#X+YC8A-Y) + TC*156K(YC47-Y) X + TA*156K(15L05#X+YC8A-Y) + TC*156K(YC47-Y) X + TA*156K(15L05#X+YC8A-Y) + TC*156K(SL(2*X+YC82-Y))
1 2 201 202	M 1 1=1=1A TWW-TWW-VWM(1)+CLWT(1) HI 2 1=1=25 VWM(1)+VWM(1)+WST/TVW MI 201 1=1+WCL TCHWS(1)=2=0+E(TAT(WST)+V/H(1)+CLWT(1)/A/TVW CH=0- MI 202 1=1=5 K-JWT(2+1) CH=CH+CLWT(K)+(YWT(1+1)+2-YVT(1)+0)	3	X 1A//2/.TA/24/.TC/28/.T0/210/.TE//20/.TE//20/.TG//RO/. X 1H/2100/.T1/2200/.TJ/2400/.TK//R00/.L/71000/.TM/22000/. X 1H/2100/.TI/2R00/.TJ/22000/ Ix- IsCHISL109XYCRA-Y) + TA*ISCHISL04*YCR2-Y) X + TA*ISCHISL05XYCRA-Y) + TC*ISCHISL04*XYCR3-Y) X + TA*ISCHISL05XYCRA-Y) + TC*ISCHISL04*XYCR3-Y) X + TA*ISCHISL05XYCRA-Y) + TC*ISCHISL04*XYCR3-Y) X + TA*ISCHISL105XYCRA-Y) + TC*ISCHISL04*XYCR3-Y) X + TA*ISCHISL10*XYCR3-Y) + TC*ISCHISL04*XYCR3-Y) X + TA*ISCHISL10*XYCR3-Y) + TC*ISCHISL04*XYCR3-Y) X + TA*ISCHISL10*XYCR3-Y) + TC*ISCHISL17*XYCR3-Y) X + TL*ISCHISL10*XYCR3-Y) + TK*ISCHISL17*XYCR3-Y) X + TL*ISCHISL10*XYCR3-Y) + TK*ISCHISCHISL27*XYCR3-Y)
1 2 201 202	M1 1 1-1.14 TVW-TVW-VVM(1)+CLUT(1) IN) 2 1-1.25 IN) 201 1-1.40CL TCIMSC[1-2.40FL(1/10(K))+V(0(1)+CLUT(1)/A/TVW) CII+0.6 M1 202 1-1.5 K-JUT(2+1) CII+0.6 CII+0.7 CII+0.7 CII+0.7 CII+0.7 CII+0.7 CII+0.7 CII+0.7 CII+0.7 CII+0.7074CR	3	X 14/22/.TA/24/.TC/28/.TN/210/.TF/220/.TF/240/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK/7800/.1L/21000/.TM/22000/. X 14/2400/.T1/2800/.1P/21000/ 1x- 15(46) \$L109x4Y(H-Y) + TA015GN(\$L139x+YCR2-Y) X + TM015GN(\$L109x4YCRA-Y) + TE015GN(\$L109xYYCRA-Y) X + TM015GN(\$L109xYYCRA-Y) + TE015GN(\$L109xYYCRA-Y) X + TF015GN(\$L109xYCRA-Y) + TE015GN(Y-UR3-SL00x) X + TF015GN(\$L119xYYCRA-Y) + T1015GN(\$L129xYYCR2-Y) X + TJ015GN(\$L119xYCR2-Y) + T1015GN(\$L129xYYCR2-Y) X + TJ015GN(\$L119xYYCR2-Y) + TR015GN(\$L129xYYCR2-Y) X + TD015GN(\$L119xYCR2-Y) + TR015GN(\$L129xYYCR2-Y) X + TD015GN(\$L119xYYCR2-Y) + TN015GN(\$L129xYYCR2-Y) X + TD015GN(\$L119xYCR2-Y) + TN015GN(\$L129xYYCR2-Y) X + TD015GN(\$L119xYYCR2-Y) + TN015GN(\$L29xYYYCR2-Y) X + TD015GN(\$L119xYYCR2-Y) + TN015GN(\$L29xYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY
1 2 201 202	00 1 1-1-1-10 TVW-TVW+VW0(1)=0CLWT(1) IW 2 1=1-25 VW1(1)=VW1(1)=WST/TVW NI 201 1=1-WCL TCWS(1)=2_a=f10A1(WST)=V/W(1)=0CLWT(1)/A/TVW C(1+0, NI 202 1=1-5 K-JW1(2+01) C(1+0(1)+C(1)+(1)=1)=+2-4VT(1)=+2) C(1+0(1)+C(1)+(1)+(1)=+2-4VT(1)=+2) C(1+0(1)+C(1)+(1)+(1)+(1)+(1)+(1)+(1)+(1)+(1)+(1)+	3	X 14/12/.TA/24/.TC/28/.TO/210/.TF/720/.TF/740/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TF/720/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TL/71000/.TM/22000/. X 1H/7400/.TU/2R000/.TP/21000/ Ix- 15(KK) 5103*X*(KH-Y) + TG+15(KK)(510*X*VCA2-Y) X + TA+15(KK) 5103*X*VCA4-Y) + TG+15(KK)(10*X*VCA2-Y) X + TF+15(KK)(510*X*VCA4-Y) + TG+15(KK)(7K)-X) X + TF+15(KK)(510*X*VCA4-Y) + TG+15(KK)(7K)-X) X + TL+15(KK)(2K+X) + TK+15(KK)(51(2*X*VCA2-Y)) X + TL+15(KK)(2K+X) + TK+15(KK)(51(2*X*VCA2-Y)) X + TL+15(KK)(2K+X) + TF+15(KK)(2K)(2K) X + TL+15(KK)(2K+X) + TF+15(KK)(2K)) U J 1=1-25. LIXH+110.4ADD.HASK(1)
1 2 201 202	00 1 1-1-10 TVW-TVW-VW0[])+CLWT[]) IW 2 1=1,75 Wm(1)+Wm(1)+WT ICLWS(])+2,0F[nhT[WST])+V/0[[])+CLWT[]]/A/TVW CLHOC ICLWS[])+2,0F[nhT[WST])+V/0[[])+CLWT[]]/A/TVW CLHOC ICLWS[])+2,0F[nhT[WST])+V/0[[])+2 CLHOC ICLWS[])+2,0F[nhT[WST])+V/0[[])+2 CLHOC ICLWS[])+2,0F[nhT[WST])+2 CLHOC ICLWS[]]+2,0F[nhT[WST])+2 ICLWS[]]+2	3	X 1A/22/.TA/24/.TC/28/.T0/210/.TF/720/.TF/740/.TG/780/. X TH/7100/.T1/2200/.TJ/2400/.TK/7800/.TL/71000/.TM/22000/. X TH/7100/.T1/2800/.TJ/2400/.TK/7800/.TL/71000/.TM/22000/. X TK/5400/.TU/28000/.TJ/21000/. Tx TK#15154KKS105ex47CA4-Y1 + TC#15GH(5L]##**CA5-Y1 X + TA#15GH(5L105ex47CA4-Y1 + TC#15GH(5L]##**CA5-Y1 X + TA#15GH(5L105ex47CA4-Y1 + TC#15GH(5L]##**CA5-Y1 X + TF#15GH(5L10Fex47CA4-Y1 + TC#15GH(Y-YCA5-SL0#X) X + TF#15GH(5L10Fex47CA4-Y1 + TC#15GH(Y-YCA5-SL0#X) X + TJ#15GH(5L10Fex47CA4-Y1 + TK#15GH(SL)27ex47CA2-Y1 X + TJ#15GH(5L10Fex47CA4-Y1 + TK#15GH(SL)27ex47CA2-Y1 X + TJ#15GH(3CA4-X1 + T##15GH(XCA3-X1 + TH#15GH(XCA2-X1) X + TI#15GH(XCA4-X1 + T##15GH(XCA3-X1 + TH#15GH(XCA2-X1) X + TJ#15GH(X1 + TD#15GH(X-X7A1)) HD 1.151x_4MD_4MA5K(1) 1141
1 2 201 202	M1 1 1+1-14 1W+ FW++VWP(1)=CLWT(1) IN) 2 1=1,25 Ywn(1)=YWP(1)=HST/TYW PUT(2) 1=1,40CL TCHMS(1)=CLWT(1)=CLWT(1)/A/TYW CHM-00 R1 202 1=1,45 K-JWT(2+1) CH-00 CH-00 CH-00 CH-00 CH-00 CH-01 CH-01 CH-02 SH+02 CH-03 CH-04 CH-05 CH-05 CH-06 CH-07 CH-07 CH-06 CH-07 CH-07 CH-07 CH-06 CH-07 CH-07 CH-07 CH-07 CH-07 CH-07 CH-07 CH-07 CH-07	3	X 1A//2/.TA/24/.TC/28/.TO/210/.TF/720/.TF/740/.TG/780/. X 1H/2100/.T1/2200/.TJ/2400/.TK/7800/.TG/780/. X 1H/2100/.T1/2200/.TJ/2400/.TK/7800/.TL/71000/.TM/22000/. X 1H/2400/.TJ/2800/.TJ/22000/ Ix- IsGHISLIDSEXFCRA-Y) + TAPISGHISLIDAPXYCRA-Y) X + TAPISGHISLIDSEXFCRA-Y) + TCPISGHISLIDAPXYCRA-Y1 X + TAPISGHISLIDSEXFCRA-Y1 + TCPISGHISLIDAPXYCRA-Y1 X + TAPISGHISLIDSEXFCRA-Y1 + TCPISGHISLIDAPXYCRA-Y1 X + TAPISGHISLIDSEXFCRA-Y1 + TCPISGHISLIDAPXYCRA-Y1 X + TAPISGHISLIDSEXFCRA-Y1 + TCPISGHIYCH7-Y1 X + TAPISGHISLIDSEXFCRA-Y1 + TCPISGHIYCH7-Y1 X + TLPISGHISLIDSEXFCRA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDSEXFCRA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDSEXFCRA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDSEXFCRA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDAPCAPA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDAPCAPA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDAPCAPA-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDAPXCR3-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR2-Y1 X + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR3-Y1 H + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR3-Y1 X + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR3-Y1 X + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR3-Y1 X + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR3-Y1 H + TLPISGHISLIDAPXYCR3-Y1 + TRPISGHISLIDAPXYCR3-Y1 X + TLPISGHISLID
1 2 201 202 401	M1 1 1-1.18 IW.TWW.TWW.YWN(1)>CLWT(1) IW 2 1-1.25 Ywn(1)>Ywn(1)>WN(1) M1 201 1-1.40C1 ICIWS(1)>Z_a6f(1A1(WST)>Y/N(1)>CLWT(1)/A/TYW CIW-00. 1-1.5 K-JW1/2011 1-1.5 K-JW1/2013 1-1.5 CIW-00. 1-1.5 CIW-01. 1-1.5 CIW-02. 1-1.5 CIW-03. 1-1.5 CIW-04. 1-1.5 CIW-05. 1-1.5	3	X $1a/22/.Ta/24/.TC/28/.Ta/210/.TF/270/.TF/240/.TG/280/. X 1h/2100/.T1/2200/.TJ/2400/.TK/2801/.TL/21000/.TM/22000/. X 1h/2400/.T1/2800/.TJ/2400/.TK/2000/.TK/2000/. X 1h/2400/.TM/22000/.TJ/21000/.TK/2000/.TK/22000/. X 1Ta : SGM (SL1038XYCH-Y) + TA : SGM (SL138XYCR3-Y) X 1Ta : SGM (SL1038XYCR3-Y) + TE : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL1038XYCR3-Y) + TE : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL108XYCR3-Y) + TI : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL108XYCR3-Y) + TI : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL108XYCR3-Y) + TI : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL108XYCR3-Y) + TI : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL108XYCR3-Y) + TI : SGM (SL128XYCR3-Y) X 1Ta : SGM (SL108XYCR3-Y) + TM : SGM (SL28XYCR3-Y) X 1Ta : SGM (SL108X) + TM : SGM (SL28XYCR3-Y) X 1Ta : SGM (SL108X) + TM : SGM (SL28X) + TM : SGM (SL28X) T 1Ta : SGM (SL108X) + TM : SGM (SL28X) + TM : SGM (SL28X) T 1Ta : SGM (SL108X) + TM : SGM (SL28X) + $
1 2 201 202 401 402	M1 1 1=1=1A TVW-TVW+VWN(1)=CLWT(1) H) 2 1=1=75 VWn(1)=vwN(1)=wST/TVW M) 201 1=1=MCL TCWS(1)=2_a=F1A11wST)=V/N_(1)=CLWT(1)/A/TVW C(H=0, TV)=20=1A1(W)=CL=1A1(WST)=V/N_(1)=CLWT(1)/A/TVW C(H=0, TV)=20=1A1(WST)=0 C(H=0, TV)=20=1A1(3	X 14/22/.TA/24/.TC/28/.TO/210/.TF/20/.TF/240/.TG/280/. X TH/2100/.T1/2200/.J2/400/.TK/280/.TC/280/. X TH/2100/.T1/2200/.J2/400/.TK/2800/.TL/21000/.TM/22000/. X TM/2400/.TU/2800/.TP/21000/ Tx :Tx
1 201 202 401	M1 1 1-1.1A 1W. FTW4.VWM(1)=CLWT(1) IN) 2 1=1.75 YM(1)-YWM(1)=WST/TYW M1 201 1=1.4CL TCMS5(1)-YWM(1)=WST/TYW M1 201 1=1.4CL TCMS5(1)-YWM(1)=WST/TYW CH1-00. M1 201 1=1.4CL CH1-00. M1 201 1=1.4S K-JW1(201) CH-00.	3	X 14/22/.TA/24/.TC/28/.TN/210/.TF/20/.TF/240/.TG/280/. X 14/2100/.T1/2200/.TJ/2400/.TK//R00/.1L/21000/.TM/22000/. X 14/2100/.T1/2200/.TJ/2400/.TK//R00/.1L/21000/.TM/22000/. X 14/2164/SL108x4YCH-Y) + TA015GA(SL1)8x+YCR2-Y) X + TM015GA(SL108x4YCRA-Y) + TE015GA(SL1)28x+YCR3-Y) X + TM015GA(SL108x4YCRA-Y) + TE015GA(SL1)28x+YCR3-Y) X + TM015GA(SL108x4YCRA-Y) + TE015GA(Y-YCR3-SL08X) X + TM015GA(SL108x4YCRA-Y) + T0015GA(YCR3-Y) X + TM015GA(SL108x4YCRA-Y) + T0015GA(SL1)28x+YCR3-Y) X + TM015GA(SL108x4YCRA-Y) + T0015GA(SL1)28x+YCR3-Y) X + TM015GA(SL108x4YCR3-Y) + TM015GA(SL1)28x+YCR3-Y) X + TM015GA(SL108x4YCR3-Y) + TM015GA(SL108x4YCR3-Y) X + TM015GA(SL108X4YCR3-Y) + TM015GA(SL108X4YCR3-Y)
1 201 202 401 402 6 10/	MD 1 1-1.14 IVW-TVW-VVM(1)=CLUT(1) IN 2 1=1.75 VM(1)=VM(1)=WST/TVW MI 201 1=1.40Ct ICMS(1)=Zameficiat(wST)=V(0,(1)=CLUT(1)/A/TVW CLU-0. MI 202 1=1.5 K-JW1/2013 CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=2-VVT(1)=0=2) CLI-CLINC(WICK)=(VVT(1)=1)=0=2-VVT(1)=0=	3	X 14/12/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/2100/.T1/2200/.1J/2400/.TK/J200/.TK/J200/. X 14/2100/.T1/2200/.1J/2400/.TK/J2000/ 1x- 15(KK)5103exY(H-Y) + TA=15(K)(5L13ex+Y(R2-Y) X + TA=15(K)(5L13exY(TA-Y) + TC=15(K)(5L13ex+Y(R3-Y) X + TA=15(K)(5L103exY(TA-Y) + TC=15(K)(1)(22+Y(R3-Y)) X + TA=15(K)(5L103exY(RA-Y) + TC=15(K)(5L12ex+Y(R3-Y)) X + TA=15(K)(5L103exY(RA-Y) + TC=15(K)(5L12ex+Y(R3-Y)) X + TA=15(K)(5L103exY(RA-Y) + TC=15(K)(5L12ex+Y(R3-Y)) X + TA=15(K)(5L103exY(R3-Y) + TC=15(K)(5L12ex+Y(R3-Y))) X + TA=15(K)(5L112exY(R3-Y) + TC=15(K)(5L12ex+Y(R3-Y))) X + TA=15(K)(5L12exY(R3-Y) + TK=15(K)(5L12ex+Y(R3-Y))) X + TA=15(K)(5L12exY(R3-Y) + TK=15(K)(5L12ex+Y(R3-Y)))) X + TA=15(K)(5L12exY(R3-Y) + TK=15(K)(5L12ex+Y(R3-Y)))) X + TA=15(K)(5L12exY(R3-Y) + TK=15(K)(5L12ex+Y(R3-Y))))) X + TA=15(K)(5L12exY(R3-Y) + TK=15(K)(5L12ex+Y(R3-Y)))))) X + TA=15(K)(5L12exY(R3-Y) + TK=15(K)(5L12ex+Y(R3-Y))))))))))))))))))))))))))))))))))))
1 2 201 202 401 402 6 (0/	M1 1 1+1-18 IVW-TVW+VWN(1)=0CLWT(1) IW 2 1=1,25 VM1(1)=VWN(1)=WST/TVW M1 201 1=1.40CL ICIWS(1)=2,26F(IAT(WST)=V/N_(1)=0(WT(1))/A/TVW CH=0. M1 202 1=1.5 X=JW170+13 CH=0.1054CR CH=0.155 M1 401 1=1.1675 FH(1.1)=0. M1 401 1=1.1675 FH(1.1)=0. M1 402 1=1.400 PMPEL(11)=0. IF(MMPS_11=0.0 IF(MMPS_11=0.0 IF(MMPS_11=0.14055) IF(MMPS_11=0.14055) IF(MMPS_11=0.14055)	3	X 14/12/.TA/24/.TC/28/.TO/210/.TF/720/.TF/740/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TF/720/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TL/71000/.TM/22000/. X 1H/7400/.TU/2R00/.J2/21000/ Ix- 15(KK) SLOBEXYCH-Y) + TAEISGN(SLIJBEXYCA2-Y) X + TABISGN(SLOBEXYCA2-Y) + TGEISGN(SLOBEXYCA2-Y) X + TFBISGN(SLOBEXYCA2-Y) + TGEISGN(SLOBEXYCA2-Y) X + TFBISGN(SLOBEXYCA2-Y) + TGEISGN(SLOBEXYCA2-Y) X + TFBISGN(SLOBEXYCA2-Y) + TGEISGN(SLOBEXYCA2-Y) X + TFBISGN(SLOBEXYCA2-Y) + TREISGN(SLOBEXYCA2-Y) X + TLBISGN(SLOBEXYCA2-Y) + TREISGN(SLOBEXYCA2-Y) X + TLBIS
1 2 201 202 401 402 C (0/	M1 1 1-1.1A Tyw.rtwi.wwm(1)=cLwT(1) H) 2 1=1.75 Ywn(1)=ywn(1)=ex57/Tyw M1 201 1=1.eCl TCM%5(1)=rt=eCl TCM%5(1)=	3 	X 14/22/.TA/24/.TC/28/.TO/210/.TF//20/.TF//240/.TG//A0/. X TH/2100/.T1/2200/.TJ/2400/.TK//A00/.TL/21000/.TM/22000/. X TH/2100/.T1/2200/.TJ/2400/.TK//A00/.TL/21000/.TM/22000/. X TH/2100/.TI/2200/.TJ/21000/.TJ/21000/.TK/22000/. X TA-154156H15L10594.YCRA-Y1 + TE4156H15L104*X+YCR5-Y1 X + TA-156H15L10594.YCRA-Y1 + TE4156H15L104*X+YCR5-Y1 X + TH-156H15L10594.YCRA-Y1 + TE4156H15L104*X+YCR5-Y1 X + TH-156H15L10594.YCRA-Y1 + TE4156H15L17-Y1 X + TL4156H15L10594.YCRA-Y1 + TE4156H15L17-Y1 X + TL4156H15L10594.YCRA-Y1 + TH4156H15L17-Y1 X + TL4156H15L1054.YCRA-Y1 + TH4156H155L17-Y1 X + TL4156H15L1054.YCRA-Y1 + TH4156H155L17-Y1 X + TL4156H15L1054.YCRA-Y1 + TH4156H155L17-Y1 X + TL4156H15117-Y1 X + TL4156H1517-Y1 X + TL4156H15117-Y1 X + TL4157H17-Y1 X + TL4157H17-Y1 X + TL4157H17-Y1 X + TL4157H17-Y1 X
1 2 201 202 401 402 6 (0/ 300	M1 1 1-1.1A IWW-TVW+VWN(1)+CLWT(1) IW) 2 1-1.25 Ywn(1)+Ywn(1)+WST/TVW M1 201 1-1.4CL TCM%2(1)-2.4F1(A1(W\$1)+YWL(1)+CLWT(1)/A/TVW CH+00. M1 202 1-1.5 K-JW1/2+1.5 CH+00. CH-00. M1 202 1-1.5 K-JW1/2+1.5 CH-00. CH-01. CH-02. CH-03. YM1/2+1.5 K-JW1/2+1.5 K-JW1/2+1.5 CH-03. CH-03. YM1/2+1.5 CH-03. YM1/2+1.5 CH-03. YM1/2+1.5 CH-03. YM1/2+1.5 YM1/2+1.5 <tr< td=""><td>3 C</td><td>X 14/22/.TA/24/.TC/28/.TN/210/.TF/220/.TF/240/.TG/280/. X 14/2100/.T1/2200/.12/2400/.TK/280/.TF/200/.TM/22000/. X 14/2100/.T1/2800/.12/21000/ 1x- 15(MK)SLD3x4YCH-Y) + TA015GN(SL13x+YCR2-Y) X + TM015GN(SLD3x4YCH-Y) + TE015GN(SL13x+YCR3-Y) X + TM015GN(SLD3x4YCRA-Y) + TE015GN(SL1224YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1224YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1224YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3X+YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3X+XCR3-Y) + TN015GN(SL1274YCR3-Y) X + TF015GN(SLD3X+XCR3-Y) + TN015GN(SLD3X+Y) + TN015GN(SLD3X+Y) X + TF015GN(SLD3X+XCR3-Y) + TN015GN(SLD3X+Y) + TN015GN(SLD3X</td></tr<>	3 C	X 14/22/.TA/24/.TC/28/.TN/210/.TF/220/.TF/240/.TG/280/. X 14/2100/.T1/2200/.12/2400/.TK/280/.TF/200/.TM/22000/. X 14/2100/.T1/2800/.12/21000/ 1x- 15(MK)SLD3x4YCH-Y) + TA015GN(SL13x+YCR2-Y) X + TM015GN(SLD3x4YCH-Y) + TE015GN(SL13x+YCR3-Y) X + TM015GN(SLD3x4YCRA-Y) + TE015GN(SL1224YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1224YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1224YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3x4YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3X+YCRA-Y) + TE015GN(SL1274YCR3-Y) X + TF015GN(SLD3X+XCR3-Y) + TN015GN(SL1274YCR3-Y) X + TF015GN(SLD3X+XCR3-Y) + TN015GN(SLD3X+Y) + TN015GN(SLD3X+Y) X + TF015GN(SLD3X+XCR3-Y) + TN015GN(SLD3X+Y) + TN015GN(SLD3X
1 202 401 402 6 10/	M1 1 1-1.18 IVW.TVW.VVM(1)0CLWT(1) IW 2 1-1.25 Ym(1)-2001 1-1.40Cl TCMSC1/22001 10057/TVW M1 201 1-1.40Cl TCMSC1/22001 101007700 (1100000000000000000000000	3 	X 1a/12/.TA/24/.TC/28/.TN/210/.TF/720/.TF/740/.TG/7A0/. X 1H/7100/.T1/2200/.TJ/2400/.TK/7A00/.TF/720/.TG/7A0/. X 1H/7100/.T1/2200/.TJ/2400/.TK/7A00/.TL/71000/.TM/22000/. X 1H/2400/.TM/21000/.TJ/21000/ Ix- 1SCMS(SLIDSXYCHI-Y) + TAEISGN(SLIDSXYCA2-Y) X + TAEISGN(SLIDSXYCHI-Y) + TEEISGN(SLIDSXYCA3-Y) X + TAEISGN(SLIDSXYCA2-Y) + TEEISGN(SLIDSXYCA3-Y) X + TAEISGN(SLIDSXYCA2-Y) + TEEISGN(SLIDSXYCA3-Y) X + TAEISGN(SLIDSXYCA2-Y) + TEEISGN(SLIDSXYCA2-Y) X + TAEISGN(SLIDSXYCA2-Y) + TEEISGN(SLIDSXYCA2-Y) X + TAEISGN(SLIDSXYCA2-Y) + TEEISGN(SLIDSXYCA2-Y) X + TAEISGN(SLIDSXYCA2-Y) + TEEISGN(SLIDSXYCA2-Y) X + TAEISGN(SLIDSXYCA2-Y) + TREISGN(SLIDSXYCA2-Y) X + TAE
1 202 401 402 6 (0/ 102	M1 1 1-1.1A 1W. FIW.4WWM(1)=CLWT(1) H) 2 1=1.75 YWM(1)=WWM(1)=WST/TYW M1 201 1=1.4CL TCM%5(1)=Z_0F[CM1(MST)=Y(M(1)=CLMT(1)/A/TYM CH*0. M1 201 1=1.4CL TCM%5(1)=Z_0F[CM1(MST)=Y(M(1)=CLMT(1)/A/TYM CH*0. CH*0. M1 201 1=1.4CL TCM%5(1)E(X)=E(YVT(1)=1)=0.2-YVT(1)=0.2) C1*0.0 C1*0.0 C1*0.0 C1*0.0 M1 401 1=1.1675 F11.10.11=0. M1 401 1=1.1675 F11.10.11=0. M1 401 1=1.1675 F11.10.11=0. M1 401 1=1.1675 F11.10.0 M1 401 1=2.16.251 M0 401 1=2.16.251 M1 401 1=2.16.11 CM1401:0 CM1401:	3 C	<pre>X 1A/22/.TA/24/.TC/28/.TO/210/.TE//20/.TE//20/.TG/280/. X TH/2100/.TI/2200/.J/2400/.TK/200/.TE//200/.TG/280/. X TH/2100/.TI/2800/.J/2400/.TK/2800/.TC/200/.TM/22000/. X TA/2500/.TV/2800/.TY/21000/.TK/200/.TM/22000/. X TA/2500/.TV/2800/.TY/21000/.TK/200/.TM/22000/. X + TA/2500/.TV/280/CRA-Y) + TG/2500/.U200/.TC/280/. X + TA/2500/.TC/200/.TF/2500/.TC/28. X + TA/2500/.TC/200/.TF/2500/.TC/28. X + TA/2500/.TC/200/.TF/2500/.TC/28. X + TA/2500/.TC/200/.TF/2500/.TC/28. X + TA/2500/.TC/200/.TA/2500/.TC/28. X + TA/2500/.TC/200/.TA/2500/.TC/28. X + TA/2500/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. X + TA/2500/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. TC/200/.TM/10/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. X + TO/2500/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. X + TO/2500/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. C000000 /C0000/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. C000000 /C0000/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. C000000 /C0000/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/.TC/200/. C000000 /C0000/.TC/200/.TC/</pre>
1 202 401 402 6 107 102	M1 1 1-1.1A IWW-TWW+VWM(1)*CLWT(1) IW) 2 1=1.75 YMM(1)*WM(1)*WST/TWW M1 201 1=1.4CL TCM%2(1)*ZM*TTATM%5)*Y/W(1)*CLMT(1)/A/TWW CH*06 M1 201 1=1.4CL TCM%2(1)*ZM*TTATM%5)*Y/W(1)*CLMT(1)/A/TWW CH*06 M1 201 1=1.4CL CH*06 M1 201 1=1.4 CH*06 CH*07 CH*06 CH*07 CH*17 CH*17	3 	X 14/22/.TA/24/.TC/28/.TN/210/.TF/250/.TF/240/.TG/280/. X 14/21/00/.T1/2200/.1J/2400/.TK/7800/.TF/240/.TG/280/. X 14/2400/.T1/2800/.TV/21000/ Tx 15(44)SL198x4YCH-Y) + TA01SGN(SL198x+YCR2-Y) X + TR01SGN(SL198x4YCRA-Y) + TE01SGN(SL198x+YCR3-Y) X + TF01SGN(SL198x4YCRA-Y) + TE01SGN(SL198x+YCR3-Y) X + TF01SGN(SL198xYCRA-Y) + TE01SGN(SL198x+YCR3-Y) X + TF01SGN(SL198xYCRA-Y) + TE01SGN(SL198x+YCR3-Y) X + TF01SGN(SL198xYCRA-Y) + TE01SGN(SL198x+YCR3-Y) X + TF01SGN(SL198xYCRA-Y) + TE01SGN(SL198x+YCR3-Y) X + TF01SGN(SL198xYCR3-Y) + TE01SGN(SL198x+YCR3-Y) X + T001SGN(ZL18X+YCR3-Y) + TH01SGN(SL198x+YCR3-Y) X + T001SGN(ZL18X+XCL1) 10 1 10120 L12Mx-L18x4MD.HASK(1) 11 + 11 + 11 - 11 - 11 - 11 CONTINUE L0(7-2A 45 T000 SUBRENITIVE COLLL1 SL10001.IN15000 COMMON /SIGN(ZL MCL.MCP.MAPI301.X150001.V150001.U150001.V150001. X H050001.IN15000 COMMON /CLNSL4.SCA.CT.ACCM.FRES.CLW1(26).TCMS(25) COMMON /T104/7.T.0T.0TM.TE0.0TSM.TEPD.TREP
1 202 401 6 (0/ 02 	M1 1 1-1.1A IVW-TVW-VWN(1)=CLWT(1) IW 2 1-1.25 IW 2 1-1.26 ICMS(1)220=F1(M1(MS))=V(M(1)=CLWT(1)/A/TVW) CH=00 M1 202 1-1.5 K=JW1/2011 CH=00 CH=01	3 C	X 14/12/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/1100/.T1/2200/.TJ/2400/.TK/J20/.TF/J20/.TG/JR0/. X 14/2100/.TI/2200/.TJ/2400/.TK/JR0/.TL/71000/.TM/22000/. X 14/2100/.TM/22000/.TZ/21000/ X 176:TCM:SLID#XYCHI-Y) + TAEISGN:SLID#XYCR3-Y) X + TAEISGN:SLID#XYCR3-Y) + TEEISGN:SLID#XYCR3-Y) X + TAEISGN:SLID#XYCR3-Y) + TEEISGN:SLID#XYCR3-Y) X + TAEISGN:SLID#XYCR3-Y) + TEEISGN:SLID#XYCR3-Y) X + TAEISGN:SLID#XYCR3-Y) + TAEISGN:SLID#XYCR3-Y) X + TAEIS
1 2 201 202 401 402 C (0/ 102	M1 1 1-1.1A IW. FIW.4WMM(1)=CLWT(1) IW. 2 1-1.25 YWM(1)=WM(1)=WST/TVW M1 201 1-1.4CL ICIMS(1)=CLMT(1)=CLWT(1)=A/TWW CUTOS. M1 201 1-1.4CL ICIMS(1)=CLMT(1)=CLWT(1)=A/TWW CUTOS. M1 201 1-1.4CL ICIMS(1)=CLMT(1)=CLWT(1)=A/TWW CUTOS. M1 201 1-1.4CL CUTOS. M1 202 1-1.5 K=JW1(201) K=JW1(201) CUTOS. M1 202 1-1.5 K=JW1(201) CUTOS. M1 202 1-1.5 K=JW1(201) CUTOS. M1 401 1=1.475 FUL(1)=0. M1 401 1=1.475 FUL(1)=0. M1 401 1=1.475 FUL(1)=0. M1 401 1=1.475 FUL(1)=0. M2 41 MILES M1 401 1=1.475 FUL(1)=0. M2 41 MILES M2 41 MILES </td <td>3 C</td> <td><pre>X 1a/12/.TA/24/.TC/28/.TO/210/.TF/720/.TF/740/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TC/71000/.TM/22000/. X 1H/7400/.TU/2R00/.TP/21000/ Tx 1GK15(100000000000000000000000000000000000</pre></td>	3 C	<pre>X 1a/12/.TA/24/.TC/28/.TO/210/.TF/720/.TF/740/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TG/7A0/. X 1H/7100/.T1/2200/.J2/400/.TK/7A00/.TC/71000/.TM/22000/. X 1H/7400/.TU/2R00/.TP/21000/ Tx 1GK15(100000000000000000000000000000000000</pre>
1 201 202 401 402 C 107 102	M1 1 1-1.1A IVW-TVW+VVM(1)*CLUT(1) IV) 2 1-1.75 IV) 2 1-1.4CL ICIMSCI 2 1-1.4CL ICIMSCI 2 1-1.4CL ICIMSCI 2 1-1.4CL ICIMSCI 2 1-1.4CL IV 20 1-1.4CL IV 40 1-2.4CL IV 411-0. IV 411-0. IV 411-0. IV 411-0. IV 411.4CL	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/750/.TF/740/.TG/280/. X 14/21/00/.T1/2200/.1J/2400/.TK/7800/.TF/7200/.TG/280/. X 14/2400/.T1/2200/.1J/2400/.TK/7800/.1L/71000/.TM/22000/. X 14/2400/.TU/2800/.TA/21000/ X + TA+TGATS(SL198X+YCH-Y) + TA+TS(K)(SL198X+YCR2-Y) X + TA+TS(K)(SL198X+YCRA-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TF+TS(K)(SL198X+YCRA-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL198X+YCRA-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL198X+YCRA-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL198X+YCR3-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL18X+YCR3-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL18X+YCR3-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL18X+YCR3-Y) + TE+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL18X+X) + TA+TS(K)(SL198X+YCR3-Y) X + TA+TS(K)(SL18X+X) X + TA+TS(K)(SL18X+X) + TA+TS(K)(SL19X+X) X + TA+TS(K)(SL18X+X) X + TA+TS(K)(SL18X+X) X + TA+TS(K)(SL18X+X) X + TA+TS(K)(SL18X+X) X + TA+TS(K)(SL18X+X) + TA+TS(K)(SL18X+X) X + TA+TS(K) X + TA+TS(
1 201 202 401 401 402 C 10/ 102 102	M1 1 1-1.1A IVW-TVW-VVM(1)+CLUT(1) IV) 1 1-1.4CL IVM(1)+VVM(1)+HST/TVW M1 201 1-1.4CL ICIMS(1)+2.4FE(IAT(MST)+VVM(1)+CLUT(1)/A/TVM) CII-0. M1 201 1-1.4CL ICIMS(1)+2.4FE(IAT(MST)+VVM(1)+CLUT(1)/A/TVM) CII-0. M1 201 1-1.4CL CII-0. M1 201 1-1.4 CII-0. M1 201 1-1.4 CII-0. CII-0. M1 201 1-1.4 CII-0. DI 4.0 CII-1.4 CII-1.4 CII-1.4 CII-1.4 CIII-1.4 CIII-1.4 CIII-1.4 CIII-1.4 CIII-1.4 CIII-1.4 CIII-1.4 CIII-1.4 <t< td=""><td>3 C</td><td>X 14/12/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/2100/.T1/2200/.1J/2400/.TK/J200/.TF/J20/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK/J2000/.TM/22000/. X 14/2100/.TM/2800/.1J/21000/.TK/200/.TM/22000/. X 176:1CGM15103exYCH-Y) + TA:1SGM(SL13exYCR3-Y) X + TA:1SGM(SL13exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL13exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) TITA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) TITA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X</td></t<>	3 C	X 14/12/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/2100/.T1/2200/.1J/2400/.TK/J200/.TF/J20/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK/J2000/.TM/22000/. X 14/2100/.TM/2800/.1J/21000/.TK/200/.TM/22000/. X 176:1CGM15103exYCH-Y) + TA:1SGM(SL13exYCR3-Y) X + TA:1SGM(SL13exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL13exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) TITA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) TITA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X + TA:1SGM(SL14exYCR3-Y) + TC:1SGM(SL12exYCR3-Y) X
1 201 202 401 402 C (0/ 102 10	M1 1 1-1.18 IVW.TVW.VVM(1)0CLWT(1) IW 2 1-1.25 IW 2 1-1.25 ICWS(1)2245f1A1(WS)0V(1)10CLWT(1)/A/TVW CU:00 M1 201 1-1.40CL ICWS(1)2245f1A1(WS)0V(1)10CLWT(1)002) CU:00 CU:00 M1 201 1-1.5 K-JW1(201) CU:01/CLW1(K)0(K)0(VT(101)002-VVT(1)002) C1:0.2024R CU:01/CLW1(K)0(K)0(VT(101)002-VVT(1)002) C1:0.2024R CU:01/CLW2(K)0(K)0(K)0(VT(101)002-VVT(1)002) C1:0.2024R CU:01/CLW2(K)0(K)0(K)0(K)0(VT(101)002-VVT(1)002) C1:0.2024R CU:01/CLW2(K)0(K)0(K)0(K)0(K)0(K)0(K)0(K)0(K)0(K)0	3 C	<pre>X 1a/12/.TA/24/.TC/28/.TA/210/.TF/720/.TF/740/.TG/7A0/. X TH/7100/.T1/2200/.TJ/2400/.TK/7A00/.TF/720/.TG/7A0/. X TH/7100/.T1/2200/.TJ/2400/.TK/7A00/.TL/71000/.TM/22000/. X TH/7400/.TU/2R000/.TJ/21000/.TK/7A00/.TK/7200/. X TTA-15KK15103EXYCRA-Y1 + TG+15KK15102EXYCRA-Y1 X + TA+15KK15103EXYCRA-Y1 + TG+15KK15102EXYCRA-Y1 X + TF+15KK15103EXYCRA-Y1 + TG+15KK15102EXYCRA-Y1 X + TF+15KK15103EXYCRA-Y1 + TK+15KK15102EXYCRA-Y1 X + TF+15KK15103EXYCRA-Y1 + TK+15KK15102EXYCRA-Y1 X + T1+15KK151103EXYCRA-Y1 + TK+15KK15102EXYCRA-Y1 X + T1+15KK15103EXYCRA-Y1 + TK+15KK15102EXYCRA-Y1 X + T1+15KK15103EXYCRA-Y1 + TK+15KK15102EXYCRA-Y1 X + T0+15KK15103EXYCRA-Y1 + TK+15KK15102EXYCRA-Y1 X + T0+15KK15103EXX151002EXYCRA-Y1 X + T0+15KK15102EXX15002EXYCRA-Y1 X + T0+15KK15102EXX15002EXYCRA-Y1 X + T0+15K15102EXX15002EXX15002EXYCRA-Y1 X + T0+15K15102EXX15002EXX15002EX X + T0+15K15102EXX15002EXX15002EXX15002EXX15002EX X + T0+15K15102EXX150</pre>
1 202 401 402 6 (0/ 102 102	M1 1 1-1.1A 1W. FTW4+WWM(1)=CLWT(1) IN) 2 1=1.25 Ywn(1)=YwM(1)=KST/TYW PM1 201 1=1.40CL TCMS5(1)=Z_0+FLA1(MS[)=Y/N(1)=CLWT(1)/A/TYW CH+06 TCMS5(1)=Z_0+FLA1(MS[)=Y/N(1)=CLWT(1)/A/TYW CH+06 TCMS5(1)=Z_0+FLA1(MS[)=Y/N(1)=20 CH+06 TCMS5(1)=Z_0+FLA1(MS[)=Z_0Y/N(1)=20 CH+06 TCMS5(1)=Z_0+TYT(1)=20 CH+06 TH+07 TH+07 </td <td>3 C</td> <td>X 14/27/.TA/24/.TC/28/.TN/210/.TF/750/.TF/740/.TG/280/. X 14/21/00/.T1/2200/.1J/2400/.1K//800/.1L/71000/.TM/22000/. X 14/2100/.T1/2200/.1J/2400/.TK//800/.1L/71000/.TM/22000/. X 14/21GK15109K2YENA-Y1 - TA015GK15L(19*K+YENA-Y1) X + TM015GM15LD9K4YENA-Y1 - TE015GK15L(19*K+YENA-Y1) X + TM015GM15LD9K4YENA-Y1 - TE015GK15L(19*K+YENA-Y1) X + TM015GM15LD9K4YENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM15LD9KYENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM15LD9KYENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM15LD9KYENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM12GA+X1 - TM015GK1(XENA-X1) + TM015GK1(XER2-X1) X + TM015GK1(TM015GK1) + TM015GK1(XENA-X1) + TM015GK1(XENA-X1) X + TM015GK1(TM0) + TM015GK1(XENA-X1) + TM015GK1(XENA-X1) X + TM015GK1(TM0) + TM015GK1(XENA-X1) + TM015GK1(XENA-X1) X + TM015GK1(TM1) + TM015GK1(TM1) + TM015GK1(TM1)</td>	3 C	X 14/27/.TA/24/.TC/28/.TN/210/.TF/750/.TF/740/.TG/280/. X 14/21/00/.T1/2200/.1J/2400/.1K//800/.1L/71000/.TM/22000/. X 14/2100/.T1/2200/.1J/2400/.TK//800/.1L/71000/.TM/22000/. X 14/21GK15109K2YENA-Y1 - TA015GK15L(19*K+YENA-Y1) X + TM015GM15LD9K4YENA-Y1 - TE015GK15L(19*K+YENA-Y1) X + TM015GM15LD9K4YENA-Y1 - TE015GK15L(19*K+YENA-Y1) X + TM015GM15LD9K4YENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM15LD9KYENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM15LD9KYENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM15LD9KYENA-Y1 - TE015GK1(YHYENA-Y1) X + TM015GM12GA+X1 - TM015GK1(XENA-X1) + TM015GK1(XER2-X1) X + TM015GK1(TM015GK1) + TM015GK1(XENA-X1) + TM015GK1(XENA-X1) X + TM015GK1(TM0) + TM015GK1(XENA-X1) + TM015GK1(XENA-X1) X + TM015GK1(TM0) + TM015GK1(XENA-X1) + TM015GK1(XENA-X1) X + TM015GK1(TM1) + TM015GK1(TM1) + TM015GK1(TM1)
1 202 401 402 C 10/ 102 102	M1 1 1-1.1A IVW-TVW+VVM(1)*CLWT(1) IW) 2 1-1.25 YM(1)*YVM+VVM(1)*#ST/TVW M1 201 1-1.4CL ICM*S(1)*Z***IA1(MS))*YVM(1)*CLWT(1)/A/TVW CH*OL	3 C	X 14/22/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK/7800/.TK/700/.TG/280/. X 14/2100/.T1/2800/.12/21000/ 1x 15(KK)SL198xYCH-Y) + TA01SGN(SL198xYCR2-Y) X + TM01SGN(SL198xYCRA-Y) + TE01SGN(SL198xYCR3-Y) X + TM01SGN(SL198xYCRA-Y) + TE01SGN(SL198xYCR3-Y) X + TM01SGN(SL198xYCRA-Y) + TE01SGN(SL198xYCR3-Y) X + TM01SGN(SL198xYCRA-Y) + TE01SGN(SL198xYCR3-Y) X + TM01SGN(SL198xYCR3-Y) + TM01SGN(SL198xYCR3-Y) X + TM01YSGN(SL19XYCR3-Y) + TM01SGN(SL198XYCR3-Y) X + TM01YSGN(SL19XYCR3-Y) + TM01SGN(SL19XYCR3-Y) X + TM01YSGN(SL19XYCR3-Y) + TM01SGN(SL19XYCR3-Y) X + TM01XYCR3-Y + TM0
1 202 401 402 C 10/ 102 10 20	M(1) 1-11.18 IVW-TVW+VWN(1)=CLWT(1) IW) 2 1=1.25 Ywn(1)=2wH(1)=WST/TVW M(2) 1=1.40C1 T(M*S(1)=2a=F1(MT(MST)=Y(M(1))=CLWT(1)/A/TVW C(H=0. M(2) 1=1.5 K=JWT/2011 K=JWT/2011 C(H=0. M(2) 1=1.5 K=JWT/2011 C(H=0. M(2) 1=1.5 K=JWT/2013 C(H=0. C(H=0. M(2) 1=1.5 K=JWT/2013 C(H=0. C(H=0. M(2) 1=1.5 S1=0.0 M(2) 1=1.4675 FH(1) 1=0. M(2) 1=1.4675 M(40) 1=1.1675 FH(1) 1=0. M(40) 1=1.4675 M(40) 1=1.4675 FH(M=S(1)=0. M(40) 1=1.4675 M(40) 1=1.4675 FH(K)(H=K)(K)(K)(K)(K)(K)(K)) M(40) 1=1.4675 M(40) 1=1.4675 <td>3 C</td> <td>X 14/12/.TA/14/.TC/28/.TA/210/.TF/120/.TF/120/.TG/180/. X 14/1100/.T1/2200/.TJ/2400/.TK/1800/.TG/180/.TG/280/. X 14/100/.T1/2200/.TJ/2400/.TK/1800/.TL/1000/.TM/22000/. X 14/1400/.TI/2800/.TP/21000/ X + TA+15400/.SUN3824YCA-Y) + TA+1540(SL194x+YCA2-Y) X + TA+1556M(SL194xYCA2-Y) + TE+156M(SL194x+YCA3-Y) X + TA+156M(SL194xYCA2-Y) + TE+156M(SL194x+YCA2-Y) X + TA+156M(SL194xYCA2-Y) + TE+156M(SL194xYCA2-Y) X + TA+156M(SL194xYCA2-Y) + TA+156M(SL194xYCA2-Y) Z + TA+156M(SL194xYCA2-Y) + TA+156M(SL194xYCA2-Y) X + TA+1000(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) X + X+100(SL194XYCA2-Y) X + X+1</td>	3 C	X 14/12/.TA/14/.TC/28/.TA/210/.TF/120/.TF/120/.TG/180/. X 14/1100/.T1/2200/.TJ/2400/.TK/1800/.TG/180/.TG/280/. X 14/100/.T1/2200/.TJ/2400/.TK/1800/.TL/1000/.TM/22000/. X 14/1400/.TI/2800/.TP/21000/ X + TA+15400/.SUN3824YCA-Y) + TA+1540(SL194x+YCA2-Y) X + TA+1556M(SL194xYCA2-Y) + TE+156M(SL194x+YCA3-Y) X + TA+156M(SL194xYCA2-Y) + TE+156M(SL194x+YCA2-Y) X + TA+156M(SL194xYCA2-Y) + TE+156M(SL194xYCA2-Y) X + TA+156M(SL194xYCA2-Y) + TA+156M(SL194xYCA2-Y) Z + TA+156M(SL194xYCA2-Y) + TA+156M(SL194xYCA2-Y) X + TA+1000(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) + TA+156M(SL194XYCA2-Y) X + TA+100(SL194XYCA2-Y) X + X+100(SL194XYCA2-Y) X + X+1
1 2 201 202 401 402 C (0/ 102 102 10 20	M(1) 1+1.1A 1W+21W+VWM(1)=CLUT(1) IN) 2 1=1.25 YM(1)+YWM(1)=HST/TYW M(2) 1=1.40Cl TCMSS(1):F2.0F1(A1(MS))*Y/M(1)=CLUT(1)/A/TYM CH-00. TATMATANANANANANANANANANANANANANANANANAN	3 C	X 14/27/.TA/24/.TC/28/.TN/210/.TF/750/.TF/740/.TG/280/. X 14/2100/.T1/2200/.TJ/2400/.TK//800/.TL/21000/.TM/22000/. X 14/2100/.TI/2200/.TJ/2400/.TK//800/.TL/21000/.TM/22000/. X 14/2100/.TM/21000/.TJ/21000/.TK//800/.TK/2000/. X 1701/200/.TM/22000/.TZ/2000/. X 1701/200/.TZ/200/.TZ/2000/. X 1701/200/.TZ/200/. X 1701/200/. X 1701/200/.
1 202 401 402 6 (0) 102 102	PM 1 1-1.1A IVW-TVW+VVP(1)=CLUT(1) IW) 2 1=1.25 Y=1.22 I(I) 201 1=1.40CL ICM 501 1=1.40 C1+00.70740R C1+00.70740R C1+01.70518 C1+1.4075 FILLI-1.4075 FILIMAND DA 1=1.	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK/7800/.TC/21000/.TM/22000/. X 14/2100/.T1/2200/.1J/2400/.TK/7800/.TL/21000/.TM/22000/. X 14/2100/.T1/2200/.TJ/2400/.TK/7800/.TL/21000/.TM/22000/. X 14/2100/.TU/2800/.TJ/2400/.TA/1500/.TA/1500/.TM/22000/. X 17015GM15105424(TA-Y) + TA015GM15L129X+YCR2-Y) X + TF015GM15105424(TA-Y) + TE015GM15L129X+YCR3-X1 X + TF015GM15115424(TA-Y) + TT015GM15L129X+YCR3-X1 X + TF015GM1511544(TA) + TP015GM15X+TCR3-X1 + TH015GM15CM2-X1 X + TF015GM1204 X + TF015GM1204 T124/25 T124/151.24M02.HASSK(1) I1-1 I6 (1X=-10FR(1)) 1,2,1 I C0MT1MH4 L0(-25 A H150001.I0150000 COMMINU (SIGH27 MCL.=CP.=MAP(30).X150001.Y150001.W150001.V150001. X M150001.I0150000 COMMINU (TAM5/CL, SIA.SIA.CR.CT.ACCM.FRES.CLW1(26).TCM5(25) COMMINU (TAM5/CL, SIA.SIA.CR.CT.ACCM.FRES.CLW1(26).TCM5(25) COMMINU (TAM5/CL, SIA.SIA.CR.CT.ACCM.FRES.CLW1(26).TCM5(25) COMMINU (TAM5/CL, SIA.SIA.CR.CT.ACCM.FRES.CLW1(26).TCM5(25) COMMINU (TAM5/CL, SIA.SIA.MA.WA.1FFRY.HA.VA.WA.UR.VA.MA.UR.VA.MB.MAP DD1=0. IF (1-1) 1.1.7 I 58-0 I4 TO 1 I 58-0 I58-0
1 201 202 401 401 402 C 10/ 102 10 20	M1 1 1-1.1A IVW-TVW-VWD(1)=CLWT(1) IW 2 1-1.25 IW 2 1-1.25 ICM-S(1)=Z_ASF(IAT(MS))=V(0,(1)=CLWT(1)/A/TVW	3 C	X 14/12/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/100/.T1/2200/.TJ/2400/.TK//R00/.TK//200/. X 14/100/.T1/2200/.TJ/2400/.TK//R00/.TL/71000/.TM/22000/. X 14/2400/.TU/2R000/.TZ/21000/. X 14/2400/.TU/2R000/.TZ/21000/. X 170:SCMS(10:extYCH-Y) + TA:SCM:(1):extYCA2-Y) X + TA:SCMS(10:extYCA2-Y) + TE:SCM:(1):extYCA3-Y) X + TA:SCMS(1):extYCA2-Y) + TE:SCM:(1):ExtYCA3-Y) Z + TA:SCMS(1):ExtYCA2-Y) + TA:SCM:(1):ExtYCA3-Y) Z + TA:SCMS(1):ExtYCA2-Y) + TA:SCM:(1):ExtYCA3-Y) Z + TA:SCMS(1):ExtYCA2-Y) + TA:SCM:(1):ExtYCA3-Y) Z + TA:SCMS(1):ExtYCA2-Y) + TA:SCM:(1):ExtYCA3-Y) Z + TA:SCMS(1):ExtYCA2-Y) X + TA:SCMS(1):ExtYCA2-Y
1 2 201 202 401 402 C (0/ 102 102 10 20 30	M1 1 1-1.1A 1W. FIVE-VWM(1)=CLUT(1) H) 2 1=1.25 YM(1)=YWM(1)=WST/TYW M1 201 1=1.40Cl TCMS5(1)=Z_0=FICAT(MST)=YW(1)=CLUT(1)/A/TYW CH-00. M1 201 1=1.40Cl TCMS5(1)=Z_0=FICAT(MST)=YW(1)=CLUT(1)/A/TYW CH-00. M1 201 1=1.40Cl TCMS5(1)=Z_0=FICAT(MST)=YW(1)=002-YWT(1)=002) C1-00. C1-00. M1 201 1=1.45 C1-00. TH: 0.5 SKC/MST(1)=002-YWT(1)=002) C1-00. C1-00. M1 401 1=1.4675 FUL(1)=0. M1 401 1=1.4675 FUL(1)=0. M1 400 1=1.1.4675 FUL(1)=0. M1 400 1=1.4675 FUL(1)=0. CUMI(1)=1.00. CUMI(1)=0. FUL(1)=0. FUL(1)=0.	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/750/.TF/740/.TG/280/. X 14/2100/.T1/2200/.TJ/2400/.TK//800/.1L/21000/.TM/22000/. X 14/2100/.T1/2200/.TJ/2400/.TK//800/.1L/21000/.TM/22000/. X 14/2100/.TM/2400/.TV/21000/ X 1701/200/.TV/21000/.TV/21000/.TK/280-71 X 1701/200/.TV/200/.TV/21000/. X 1701/200/.TV/200/.TV/2100/.TV/280-71 X 1701/200/.TV/280/.TV/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TC/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TC/280-71 X 1701/200/.TV/280/.TV/270/.TV/280-720/.TC/280/.TC/270/.TV/280/.TV
1 202 401 402 6 102 102 102 10 102 10 10 20 40	P(1 1 1-1.1A IVW-TVW+VVP(1)=CLUT(1) IV) 2 1=1.25 VP(1)=VVP(1)=VVP(1)=CLUT(1)/A/TVW P(1)=20	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK//800/.TC/21000/.TM/22000/. X 14/2400/.T1/2200/.1J/2400/.TK//800/.TC/2100/.TM/22000/. X 14/2400/.TU/2800/.TZ/21000/.TZ/21000/.TM/22000/. X 110:SGMSSIDSAVERA-Y1 - TGAISGMISLIJSAVERA-Y1 X + TMAISGMISLDSAVERA-Y1 - TGAISGMISLIJSAVERAS-Y1 X + TFAISGMISLIDSAVERA-Y1 - TGAISGMISLIJSAVERAS-Y1 X + TFAISGMISLIDSAVERA-Y1 - TGAISGMISLIJSAVERAS-Y1 X + TFAISGMISLIDSAVERA-Y1 - TGAISGMISLIJSAVERAS-Y1 X + TFAISGMISLIDSAVERA-Y1 + THAISGMISLIJSAVERAS-Y1 X + TFAISGMISLIDSAVERAS-Y1 + THAISGMISLIJSAVERAS-Y1 X + TFAISGMISLIDSAVERAS-Y1 X + TFAISGMISLIDSAVERAS-Y1 H + TFAISGMISLIDSAVERAS-Y1 X + TFA
1 201 202 401 401 402 C 10/ 102 107 10 20 40 40 40	M1 1 1-1.1A IVW-TVW-VVM(1)>CLUT(1) IV) 2 1-1.25 IVM(1)-VVM(1)>BASI/TVW M1 201 1-1.4CL ICMS(1)-2ASE[IAT(MS[)>V(M(1))>CLUT(1)/A/TVM CH-06 M1 202 1-1.5 K-JW1/2+13 CH-06 CH-07 CH-07 <tr< td=""><td>3 C</td><td>X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/2100/.T1/2200/.1J/2400/.TK//R00/.TK//2000/. X 14/2100/.T1/2200/.1J/2400/.TK//R00/.1L/71000/.TM/22000/. X 14/2400/.TU/2R000/.1P/21000/ X 110/25015(1059247(Ha-Y) + TA0156h(5L1304×YCR3-Y) X + TA0156h(5L1304×YCR3-Y) + TE0156h(1)/24X+7CR3-Y) X + TF0156h(5L1304×YCR3-Y) + TE0156h(1)/24X+7CR3-Y) X + TF0156h(5L1304×YCR3-Y) + TE0156h(5L120+Y+CR3-Y) X + TJ0156h(5L1304×YCR3-Y) + TE0156h(5L120+Y+CR3-Y) X + TJ0156h(5L1304×YCR3-Y) + TE0156h(5L120+Y+CR3-Y) X + TJ0156h(5L1304×YCR3-Y) + TE0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3-Y) + TE0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3+Y) + TH0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3+YCR3+Y) + TH0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3+YCR3+Y) + TH0156h(5L120+YCR3+YCR3+Y) JUL 1 + 12-2 1 (TM00-156h(5Ch111) +,2+1 1 COMTMMH (Ch130+(STNKE/ MCL.=CP,=MAP1301+X150001+Y(5000)+U15000)+V(5000)+ X + 050001+10156h(50) COMMON /TLME/ T.DT.DTM.TE0.DTSN.TEND.DTRP.TREP JAMF1 157/MEX/RasKA.MA.MA.TIFRY.ULA-VA.WA.UB.VB.WB.MAP CD1700 IF (1 -11 1.1-2) 1 Kanapl(1) Kanapl(1) Kanapl(1) Kanapl(1)/FKRAJFKRA MABASCH1(J/FKRAJFKRA M</td></tr<>	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/2100/.T1/2200/.1J/2400/.TK//R00/.TK//2000/. X 14/2100/.T1/2200/.1J/2400/.TK//R00/.1L/71000/.TM/22000/. X 14/2400/.TU/2R000/.1P/21000/ X 110/25015(1059247(Ha-Y) + TA0156h(5L1304×YCR3-Y) X + TA0156h(5L1304×YCR3-Y) + TE0156h(1)/24X+7CR3-Y) X + TF0156h(5L1304×YCR3-Y) + TE0156h(1)/24X+7CR3-Y) X + TF0156h(5L1304×YCR3-Y) + TE0156h(5L120+Y+CR3-Y) X + TJ0156h(5L1304×YCR3-Y) + TE0156h(5L120+Y+CR3-Y) X + TJ0156h(5L1304×YCR3-Y) + TE0156h(5L120+Y+CR3-Y) X + TJ0156h(5L1304×YCR3-Y) + TE0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3-Y) + TE0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3+Y) + TH0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3+YCR3+Y) + TH0156h(5L120+YCR3-Y) X + TJ0156h(5L130+YCR3+YCR3+Y) + TH0156h(5L120+YCR3+YCR3+Y) JUL 1 + 12-2 1 (TM00-156h(5Ch111) +,2+1 1 COMTMMH (Ch130+(STNKE/ MCL.=CP,=MAP1301+X150001+Y(5000)+U15000)+V(5000)+ X + 050001+10156h(50) COMMON /TLME/ T.DT.DTM.TE0.DTSN.TEND.DTRP.TREP JAMF1 157/MEX/RasKA.MA.MA.TIFRY.ULA-VA.WA.UB.VB.WB.MAP CD1700 IF (1 -11 1.1-2) 1 Kanapl(1) Kanapl(1) Kanapl(1) Kanapl(1)/FKRAJFKRA MABASCH1(J/FKRAJFKRA M
1 201 202 401 402 C (0/ 102 10 10 20 30 40 40 0 40 40 0 40	M(1) 1+1.1A 1W. FUN-VWM(1)=CLUT(1) M(2) 1=1.75 YM(1)=YMM(1)=BST/TYW M(2) 1=1.8C T(M*) T(M*) T(M*)	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/750/.TF/740/.TG/280/. X 14/2100/.T1/2200/.TJ/2400/.TK//800/.1L/21000/.TM/22000/. X 14/2100/.T1/2200/.TJ/2400/.TK//800/.1L/21000/.TM/22000/. X 14/2100/.TM/21000/.TJ/2400/.TK//800/.L/21000/.TM/22000/. X 14/2101510302.TA21000/.TJ/21000/.TK/280-71 X 17015GM15103extCRA-Y1 + TGe15GM15L03extYCRA-Y1 X 17015GM15103extCRA-Y1 + TGe15GM17C(R3-SL08X) X 17015GM15113extCRA-Y1 + TGe15GM17C(R3-SL08X) X 17015GM15113extCRA-Y1 + TGe15GM17C(R3-SL08X) X 17015GM15113extCRA-Y1 + TGe15GM17C(R3-SL08X) X 17015GM121A-X1 + TG915GM1X-YCR3-Y1 X 17015GM121A-X1 + TG915GM1X-YCR3-Y1 X 17015GM121A-X1 + TG915GM1X-YCR3+X1 + TMF15GM17CR2-Y1 X 17015GM121A-X1 + TG915GM1X-YCR3+X1 + TMF15GM17CR2-Y1 Z 1702-11 RF1188 LTM-117222 Z 1702-11 RF1188 Z 1702-11 RF1188 Z 1702-11 GMMMM /CN16E/ MC1.MCP.MAP1301xX150001.Y150001.W150001.V150001. X 140001.T0150001 CMMMM /CN16E/ MC1.MCP.MAP1301xX150001.Y150001.W150001.V150001. X 140001.T0150001 CMMMM /CN16F/ T.DT.DTM.TF0.DTSM.TEMD.DTRP.TREP TMMTM /RAM78.C CMMMM /TMF/ T.DT.DTM.TF0.DTSM.TEMD.DTRP.TREP TMMTM /RAM78.C CMMMM /TMF/ T.DT.DTM.TF0.DTSM.TEMD.DTRP.TREP TMMTM /RAM78.C CMMMMM /TMF/ T.DT.DTM.TF0.DTSM.TEMD.DTRP.TREP TMMTM /RAM78.C CMMMMM /TMF/ T.DT.DTM.TF0.DTSM.TEMD.DTRP.TREP TMT=0. IF (1-11 1.1.2) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) X Xa=SQN1(-1) XA=XAA+1 IF (XA=XAA+1 IF (XA=XAA+1) ID.10.4 CTA=COM3(XA=XAA+1) SQN1(XA) MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXAA+1[TAAAMA-XAA+1]XA MAXA
1 201 202 401 402 C 107 102 102 102 10 102 10 20 40 40 40 40 40 40 40 40 40 4	P(1 1 1-1.1A IW - FIVE-VUP(1)=CLUT(1) IW) - FIVE-VUP(1)=CLUT(1) IW) - FIVE-VUP(1)=CLUT(1) P(1 1)=VUP(1)=P(1)=P(1)=P(1)=P(1)=P(1)=P(1)=P(1)=	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TG/280/. X 14/2100/.T1/2200/.1J/2400/.TK//800/.TC/21000/.TM/22000/. X 14/2400/.T1/2200/.1J/2400/.TK//800/.TC/2100/.TM/22000/. X 14/2400/.TU/2800/.TZ/21000/ X 1701/28015015000/ X 1701/28015015000/ X 1701/28015015000/ X 1701/28015015000/ X 1701506015010140/CR-V1 + TG4150605000000000000000000000000000000000
1 202 401 402 6 107 107 10 20 107 10 107 10 107 10 107 10 107 10 107 10 107	M1 1 1-1.1A IVW-TVW-VVM(1)*CLWT(1) IW) 2 1-1.25 Ym(1)*VVM-VVM(1)**ST/TVW M1 201 1-1.4CL CLM-CL TCM*S(1)*Z**F1(AT(MS))*V(M(1)*CLWT(1)/A/TVW CLM-CL CLM-CL TCM*S(1)*Z**F1(AT(MS))*V(M(1)*1*CLWT(1)*A/TVW CLM-CL CLM-CL TCM*S(1)*C***********************************	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TF/J20/. X 14/2100/.T1/2200/.1J/2400/.TK//R00/.1L/71000/.TM/22000/. X 14/2100/.T1/2200/.12/21000/ 1x 15(45(51045x)192x)(14-7) + TGe15(6k)(5L130x+V(R2-Y)) X + TM015(6k)(5L130x+V(RA-Y) + TGe15(6k)(1)20x+V(R3-Y)) X + TM015(6k)(5L130x)(RA-Y) + TG015(6k)(1)20x+V(R3-Y)) X + TM015(6k)(5L130x)(RA-Y) + TG015(6k)(5L170x+V(R2-Y)) X + TA015(6k)(5L130x)(RA-Y) + TG015(6k)(5L170x+V(R3-Y)) X + TA015(6k)(5L130x)(RA-Y) + TG015(6k)(SL170x+V(R3-Y)) X + TA015(6k)(5L130x)(RA-Y) + TG015(6k)(SL170x+V(R3-Y)) X + TA015(6k)(5L110x)(RA-Y) + TG015(6k)(SL170x+V(R3-Y)) X + TA015(6k)(5L110x)(RA-Y) + TG015(6k)(SL170x+V(R3-Y)) X + TA015(6k)(1) TA015(6k)(1) 10015(6k)(1) + TA015(6k)(SL170k)(1) 10015(6k)(1) + TA015(6k)(SL170k)(1) 10015(6k)(1) + TA015(6k)(SL170k)(1) X + TA015(6k)(1) + TA015(6k)(SL170k)(1) 10015(6k)(1) + TA015(6k)(SL170k)(1) 10015(6k)(1) + TA015(6k)(SL170k)(1) X + TA015(6k)(1) + TA015(6k)(SL170k)(1) + TA000)(1) X + TA015(6k)(1) + TA015(6k)(SL170k)(1) + TA000)(1) X + TA015(6k)(1) + TA015(6k)(SL170k)(1) + TA000)(1) + TA000)(1) X + TA015(6k)(1) + TA015(6k)(SL170k)(1) + TA000)(1) + TA000)(1) + TA015(6k)(1) + TA015(6k
1 201 202 401 402 C 107 102 10 20 30 40 40 102 10 20 30 40 40 30 40 30 40 30 40 30 20 30 40 30 40 30 20 30 40 30 20 30 40 30 20 30 40 30 20 30 40 30 20 30 20 30 40 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 20 30 30 30 30 30 30 30 30 30 3	M1 1 1-1.1A 1W. 1W.+VWM(1)=CLUT(1) 1W. 2 1=1.25 YWM(1)=YWM(1)=WST/TYW M1 201 1=1.4CL TCMS(1)=Z_20F1(M1(MS))=Y(M(1))=CLUT(1)/A/TYW CH-0. TCMS(1)=Z_20F1(M1(MS))=Y(M(1))=CLUT(1)/A/TYW CH-0. TCMS(1)=Z_20F1(M1(MS))=Y(M(1))=0.2-YVT(1))=0.2 CH-0. TH 202 1=1.5 K-JWT(201) CH-0. TH 202 1=1.5 K-JWT(201) TH 202 1=1.5 K-JWT(201) Starto, 707951A Starto, 701951A Starto, 701951A Starto, 701951A Starto, 701974	3 C	<pre>X 1a/12/.TA/14/.TC/28/.TA/210/.TF/120/.TF/120/.TG/180/. X 1H/2100/.T1/2200/.TJ/2400/.TK/1800/.TG/280/. X 1H/2100/.T1/2200/.TJ/2400/.TK/1800/.TG/280/. X 1H/2100/.TJ/2200/.TJ/2400/.TK/1800/.TG/280/. X TRATSCHILSINSEXTENTY / TATISGN/CLISEXTCRS-Y) X - TRATSCHILSINSEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TRATSCHILSINSEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TRATSCHILSINSEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TATISGN/SLISEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TATISGN/SLISEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TATISGN/SLISEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TIAISGN/SLISEXTCRS-Y) - TGAISGN/CLISEXTCRS-Y) X - TGAISGN/SLISEXTCRS-Y) - TGAISGN/SLISEXTCRS-Y) X - TGAISGN/SLISEXTCRS-Y) - TGAISGN/SLISEXTC</pre>
1 201 202 401 402 C 107 102 102 102 10 102 10 20 40 40 102 102 102 10 20 40 102 102 102 102 102 102 102 10	M1 1 1-1.1A 1W. FUNLAWERT[J=CLWT(I]) IN 2 1=1.25 Ywn(I)-YwN(I)=#ST/TYW M1 201 1=1.#CL TCMSS[J=2,20F[TA1(MS])=Y/N(I)=20CLWT(I)>A/TYW CH-0. TCMSS[J=2,20F[TA1(MS])=Y/N(I)=20CLWT(I)>A/TYW CH-0. TCMSS[J=2,20F[TA1(MS])=Y/N(I)=20CLWT(I)>A/TYW CH-0. TCMSS[J=2,20F] CH-0. TM: 202 1=1.5 K-JWI(701) K-JWI(701) TM: 001 State CH-0.707451A STA-0.707451A CLWFIND FARSIZAL STA-0.707451A STA-0.707451A STA-0.707451A STA-0.707451A STA-0.707451A STA-0.707451A STA-0.707451A STA-0.707451A STA-0.707451A STA-0.70747050874	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TG/280/. X 1W/2400/.T1/2200/.1J/2400/.TK//800/.TC/2100/.TM/22000/. X 1W/2400/.T1/2200/.TJ/2400/.TK//800/.TC/2100/.TM/22000/. X 1W/2400/.TU/2800/.TJ/2200/. X 1W/2400/.TU/2800/.TJ/2200/. X 1TO:SCMISIDSEVENELY : TGEISGMISLIDSEVENELY : X - THEISGMISIDSEVENELY : X - THEISGMISMIS : X - THEISGMISIDSEVENELY : X - THEISGMISIDSEVENELY : X - THEISGMISIDSEVENELY : X - THEISGMISMIS : X - THEISGMISIDSEVENELY : X - THEISGMISIDSE : X - THEISGMISIDS
1 202 401 402 C 10/ 102 102 102 102 102 102 102 102 102 102	PM 1 1-1.1A IW - TVW+VWP(1)*CLUT(1) IW - TIV+VWP(1)*ENST/TVW PM (1)*VWP(1)*ENST/TVW CH-00 PM (1)*P2*EF1(A1(MS))*V(L(1)*CLUT(1)*///VV CH-00 PM (1)*CN*CN*CN*CN*CN*CN*CN*CN*CN*CN*CN*CN*CN*	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/J20/.TF/J20/.TG/JA0/. X 14/2100/.T1/2200/.1J/2400/.TK/JA00/.TG/JA0/. X 14/2100/.T1/2200/.1J/2400/.TK/JA00/.TG/JA0/. X 14/2100/.T1/2200/.TJ/2400/.TK/JA00/.TG/J00/.TM/22000/. X 14/2100/.TU/28000/.TZ/21000/. X 17015GM15105424(TA-Y) + TA015GM15L12844(TA-Y) X + TA015GM15105424(TA-Y) + TE015GM15L12844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15L12844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15L12844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15L12844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15(1)2844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15(1)2844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15(1)2844(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15(1)2744(TA-Y) X + TA015GM1511944(TA-Y) + TE015GM15(1)2744(TA-Y) X + TA015GM151194(TA-Y) + TR015GM15(1)2744(TA-Y) X + TA015GM151194(TA-Y) + TR015GM15(1)20001.4150001.4150001.4150001.4150001. X 4050001.10150000 COMMENN (TAM5/CL, MCL.=CP.MAP1301.X150001.4150001.4150001.4150001.4150001. X 4050001.10150000 COMMENN (TAM5/CL, STA.STA.CR.CT.AFCOM.FRES.CLWT126).TCMS125) COMMENN (TAM5/CL, STA.STA.CR.CT.AFCOM.FRES.CLWT126).TCMS125) COMMENN (TAM5/CL, STA.STA.CR.CT.AFCOM.FRES.CLWT126).TCMS125) COMMENN (TAM5/CL, STA.STA.CR.CT.AFCOM.FRES.CLWT126).TCMS125) COMMENN (TAM5/CL, STA.STA.CR.CT.AFCOM.FRES.CLWT126).TCMS125) COMMENN (TAM5/CL, STA.STA.CR.CT.AFCOM.FRES.CLWT126).TCMS125) COMMENN (TAM5/CL, STA.STA.STA.STA.STA.STA.STA.STA.STA.STA.
1 202 401 402 6 107 102 102 102 102 102 102 102 102 102 102	M1 1 1-1.1A 1W. 2 1-1.2A 1W. 2 1-1.3C M1 2 1-1.4CC CH-1.4.4C CH-0. M1 20 1-1.4CC CH-0. M1 20 1-1.4CC CH-0. M1 20 1-1.4CC CH-0. M1 20 1-1.4CC CH-0. M1 20 1-1.4C CH-0. CH-0. M1 20 1-1.4C CH-0. CH-0. M1 20 1-1.4C CH-0. CH-0. CH-0.7074CR CH-0.7074CR CH-0.7074CR CH-1.4C CH-0.7074CR CH	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/750/.TF/740/.TG/780/. X 1M/2100/.T1/2200/.TJ/2400/.TK/7800/.TL/71000/.TM/22000/. X 1M/2400/.TU/2800/.TJ/2400/.TK/7800/.TL/71000/.TM/22000/. X 1M/2400/.TU/28000/.TJ/2400/.TK/7800/.TL/71000/.TM/22000/. X 1M/2400/.TU/28000/.TJ/2400/.TK/780.TL/71000/.TM/22000/. X 1M/2400/.TU/28000/.TJ/2400/.TK/780.TL/71000/.TM/22000/. X + TMEISGNIS(159X47CHA-Y) + TGEISGNIS(19X4YCR3-Y) X + TMEISGNIS(159X47CHA-Y) + TEEISGNIS(19X4YCR3-Y) X + TMEISGNIS(159X47CHA-Y) + TEEISGNIY(TH/7-Y) X + TJEISGNIS(159X47CHA-Y) + TEEISGNIY(TH/7-Y) X + TJEISGNIS(159) 1.2.2.1 1 CONTINUE (TC-27A AETIMAM EAD SUBARCHITIME COLIT(1) SCIMMER 1970 COMMON /TIME/ MCL.MCP.MAPI301.XISD0U1.YISD001.VISD001. X MISD001.IN(5000) COMMON /TIME/ COLIT(1) SCIMERTMITIME SCIMERTMITIME SCIMERTMITIME SCIMERTMITIME SCIMERTMITIME SCIMERTMITIME SCIMERTMITIME SCIMERTMITIME SC
1 201 202 401 402 C (0/ 102 102 102 102 10 20 40 40 102 102 102 102 102 102 102 10	M1 1 1-1.1A 1W. 2 1-1.25 1W. 2 1-1.25 Ywn(1)-Ywn(1)+##ST/TYW M1 201 1-1.40Cl TCMSS(1)-22.8F1(A1(MS))-Y/M(1)+2CLMT(1)/A/TYM CH-06 M1 201 1-1.40Cl TCMSS(1)-22.8F1(A1(MS))-Y/M(1)+2CLMT(1)/A/TYM CH-06 M1 201 1-1.40Cl TCMSS(1)-22.8F1(A1(MS))-Y/M(1)+2CLMT(1)/A/TYM CH-06 M1 201 1-1.40 SR-07.4CR TH-10.7D1+S1A STA-07.4CR STA-07.4CR	3 C	X 14/27/.TA/24/.TC/28/.TA/210/.TF/250/.TF/240/.TG/280/. X 1W/2400/.T1/2200/.12/2400/.TK/280/.TG/280/. X 1W/2400/.T1/2200/.12/21000/ Tx 15415504510924708-71 - TA155045112924708-71 X - TMP156W1510924708-71 - TA1550451129247088-71 X - TMP156W1510924708-71 - TG156W17(H7-7) X - TMP156W151 - TMP156W17-2761) T0 1 - 12-25 1 12W-11640120 X - TMP156W151 - TMP156W17-2761) T0 1 - 12-25 1 12W-1164(1)) 1.7.1 1 CONTINUE (TC-76 A f1080 Ean SUBREDUTIVE CONTINUE Ean SUBREDUTIVE CONTINUE SUBREDUTIVE CONTINUE SUBREDUTIVE

۲

-27.

.

.

.

.....

		_	
	1F(001,11,014) 60 TO 7		
	THERANDI LAS OF LODY-DIAL (TON) CO TO 1		SUBJECT TINE DOWN CHAP-2 - C-EA
	· · · · · · · · · · · · · · · · · · ·		IImprovide mart()
	ar to to 🗢		(X=)
7	FIERANDY(4)		MAsh
	FV=VANNe[W]	1	NAENAV([X]+]
			CALL TH(MA,SIR)
	+=/(#1(r(s+(s+ha+A+ha+M)		10P1(,1)#46
	IF (F) 7.7.M		1F ([X-K] 2.2.3
M	16 (F-1.) 4.9.7	,	2F THRM
		2	1 7-1 7-1
-		•	
	EV=VRFI #FV/F		
	FWzVRFI ofy/f		GD 10 1
	11(#A)=0.5+((A+0A-F)) 1		E M U
			CHEWALLER THE FALL
	*(08)*U0 7*(*R**0-F*)		
	P(NA)=(1_5+(WA+WR-FW)		CITAMIN AANAA TIISTISTISTIA ANSINA ANS ANS TIN
	{\{\KA}}={\\C\4A}+7		CH4MAN /STARF/ ACL+MCP+MAPE303+XE5AA0)+VE5AA0}+HE56A0}+VE5AA03+
	116MB3 #0.5#111A+118+F113		X #(5000)+10(5000)
			V/Nievh

	w(mH)=D=D=D=C=AA+AB+EN)		T (m) = T m
	[D(MA)=[D[MA)+2		E F C Pa B an E S M
	11694-0		V(M)+VM
	ICTUDES ED D 1 UNITERA PUENS		
	Fritkrierus/ == [Fritelary]		
	<u>IF (88)-018) 5-10,10</u>		
10	NT+NT+NDT+FKRA		R F THRM
	KË THRM		ENG
	EAD .		THEORINY FUEL THE MAN
	FIML111W 204(T*H*X)		CIMMON /SIDEF/ NCL. #CP.MA"(30).X(5000).Y(5000).V(5000).
с.	SKIMMER 1470		X W150001+10150001
	DIMENSION X(1)		*{#}=*{*}
		-	
	HEA		((*)*((*)
	PG 4 1+1.M		V(M)=V(N)
	XM=X(])		W(M)=W(N)
	16 (VM-A1 1-7-7		10(M) = 10(M)
	tr taren, tarer		
	A12M		RF 100
,	IF (XM-H) 4.4.3		END
٦	ReXM		SUBROUT INF FRP (NARS)
4	CONTINUE	r	SK100FR 1970
•		••	CONTRACT FOR DEL DELLE DELLE THE DELLE FOR THE TAR FOR THE TAR AND THE TAR
			CURRENT ARTURY PETITIT MANUARMAN INF THAS COAST TRACKLARA RATE TO THE
	RETIRN		X 5111+5L12+XGHN+XCH1+XCH5+YCH1+YGH2+YEH3+YGH4+YCH5+YGHA+YCH7
	END		<u>_X_SLO1+SLO2+SLO3+SLO4+SLO5+_SLI3+SLI4+_RAD[N+D]SN]+_XN]+YM</u> ++
	SUBRIMITING TRAKP(MARS)		X XND. YND. XN5. YN5. YOL (25)
			CHIMNEL JULGET VO VO VM VM AND IN IN THE
•	10100010 171001 T DT DTA TA DESA TEND 1500 1800		Champe Frenzy and the start start start the start sta
	comment / 11mm / 1407401407Mg TEQ9015Mg TEND9UTRP9 TRPP		LUMMUN /LUMY/ LUHSIANSIBACKACCTAACCUMAPRESACLW712014TCUAS(25)
	COMMON /STORF/ NCI.MCP.MAP(30).X(5000).Y(5000).U(5000).V(5000).		CUMMON /RAND/ R+G
	X W(5000) + [D(5000)		CIMMON /HCRD/ DBPR.DHPR.BPRF1 (50).HPRFL (10)
	COMMON /CONS/ CILSIA, SIR. CR. CT. ACCON. PRES. CIWI(24). TOOMS (25)		CURRON /TIME/ T.OT.OTH. TEO.DISH. TEND. DIW. TREP
	CIMMON /VARCE VO. VO. VM. UM. UM. UM. LIM		
			LUTUR / NIRTARESER
	DATA 10/16384/		17=01
	Mr 1	31	CALL LCHKISLD5+YCR6+XCR1+XCR5+~1++K5+1L)
,	MPC(= MAP(NCt)	-	CALL LCHK (D., YCB7, XCB5, XCB0, -1,
÷		33	
· ·	17 (M-M/G) = 44443	**	LALI _ LURKIJUSTUBJUBJUS + AL HUS [+ 4 A 4 1]
3			
4	10M*10(H)	C	
	1E (108/10) 6-6-5		16(1)M3 19, 19, 1
,	Intels Intel?	-	
	Manut + 1	7	174-2020
	~ •		

	GO TO 2	1+(1(-11) 19,3,3
6	LD= INVRSIMAP+NCL+N)	\$ CALL TRANS(TT+0)
	X()+X(N)	1F(YCR2-YH) 4.4.1H
	Y()= Y { # }	4 IF(YCK3-YM) 14,14
		C HEAN EROFILE
· · · · ·	<u> </u>	<u>21</u>
	Hurm(H)	IF(TL-TT) 14.22.22
• •		22 GR TO(19+23)+KSAM
10	LM=(1), (XR, TM)	23 CALL TRANS(T*+0)
		CALL SIFT(0 DRPR. RPRH: 50.1YM)
14	15 (118+i0) 9,12,10	
0	CALL DOWNEMAD.M.LO.1.LMS	
•	Hall+1C10	
	60 10 11	
10	CALL UP(HAP-H-LO-LH)	/ CALL REFLIGESTING
	_10H=10H+1C	
11	MM+MAP(LM)	9 161 ACON-PANNI (21) 10-10-11
	60 10 13	
12	Mittal	
	N=N+]	
13	CALI TRS(MM)	
	1F(1CL0-1), 1.1.15	IE(NARS.117.01 Y0=10000.
15	DO 151 1=7.1CLO	
151	CALL FIT(IN+G1)	12 1FEACCOM-RANDI (41) 13-13-14
	GD TO T	13 CALL REFLIXAL YAL
7	CALÉ INP(MAP,M_,NCL)	1F (NAPS+LT+0) Y0=10000-
	MAP(NCL]+HPCL-	GO TO 19
		14 CALL FMIT(XNI, YNI)
		1F(NARS-(1.0) Y0=10000.
	FINELEIN INVESTABLES	60 TO 19
	ten	
	tet	16 (ACCOM-RANDI (#)) 14-16-17
~		
		IN LALE IRAM(11+1)
-10	1F (J-1-1) 10,10,6	CALL XFF1 [-],.0,)
10	IF (J-1-1) 10,10,6	CALL (FRANCING) CALL (FRIC-1, 0,) IF(MANG, 17, 0) VIO 10000.
10]F (J-1-1)]0+10+6 NVRS=J RETIRM K=(1+1/2)	CALL #RATIN, D. CALL #REF(F-), 0, 3 F(MARS, 17,0) VI+10000, (0 TO 3)
10	JF (J-1-11 10.10.6 INVRS-J RETURN K=(10.J)/2 JF (M-NAP/K1) 7.7.8	CALL CERTIFICION CALL CERTIFICION (O IN 3) 17 CALL FMITCION
10]F (J-1-1) 10,10,6 [NVRS=J RETURN K=(1+J)/2]F (M-MAP(K)) 7,7,8]F	CALL (FRA=(1+,1)) CALL (FR1(-1,+0,-)) TF(MANC,(T,0)) V(*)DORO, (D IN 3) 17 CALL FM1(1-1,+0,-) TF(MARC,(T,0)) V(*)DORO, (CALL (FR1(1+,1))) V(*)DORO, (CALL (FR(1+,1))) V(*)DORO, (CALL
10 • 7	JF (J-1-11 10,10,6 INVES-J RETURN K=(1+J)/2 JF (M-MAP(K)) 7.7.8 Jek G1 T0 9	CALL (FRA=(1), 1) CALL (FF(-), 0,) IF(MARS, 17, 0) V(*)0000. (0 In 3) (ALL F#17(-), 0,) IF(MARS, (1, 0) V(*)000, G0 In 3] CALL (1) V(*) COOO, G0 In 3] CALL (1) V(*) COOO, G0 In 3]
10 A 7	JF (J-1-11 10,10,6 INVRS-J RETURN K=(1+J)/2 IF (M-MAP(K)) 7,7,8 J+K GU 10 9 I=K	CALL REALINED CALL REFIL-1,.0,) IFLWARS, IT.0) VI*10000. (0) IN 31 17 CALL FMIT(-10.) IFLWARS, (I.0) VN*10000. (0) IN 31 17 GO IN 31 17 18 GO IN 31 24
10 A 7	JF (J-1-1) 10,10,4 INVRC-J RETURN K=(1+J)/2 JF (M-MAP(K)) 7,7,4 J=K G0 T0 9 T=K G0 T0 9	CALL XERTI-10.) CALL XERTI-10.) IF WARKS (IT.0) VI=10000. (0 In 3) 17 CALL FWITI-10.) IF WARKS (IT.0) VI=10000. (0 In 3) 19 Git In (14-26), KSAM 24 CALL SIFTIOONPUL.MORE
10 A 7	JF (J-1-11 10.10.6 INVRS=J RETURN K=(1+J)/2 IF IF (M-MAP(K)) J=K G0 10 T=K G0 10	CALL (FRANCITION) FF(MARS, (1, 0, 0)) 17 CALL (FF(1-1, 0, 0)) 17 CALL (FF(1-1, 0, 0)) 17 CALL (FF(1-1, 0, 0)) 18 CALL (FF(1-1, 0, 0)) 19 CALL (FF(10, 0)) 19 CALL (FF(10, 0)) 19 CALL (FF(10, 0)) 19 CALL (FALL, 0))
10 A 7	[F (J-1-1) 10,10,6 INVES=J RETURN K=(1+J);/2 J=K G0 10 9 T=K G0 10 3 FMD FMD	CALL REACTION VIEIDORO. (0) TO AL 17 CALL REFL-1,.0.) 17 18 17 18 19 10 19 10 10 10 10 10 10
10 A 7 R	JE (J=1-11 10,10,6 IMVRS=J RETURN K=(1+,J)/2 F J=K G0 J=K G0 T=K G0 <td>CALL (ERAC(11.1)) CALL (EFI(-1,.0,.) IF(WARS(17.0) V(*)0000. (0 In 3) 17 CALL F#(17(-10,.) 17 CALL F#(17(-100) 18 CALL (10.24), xCAM 74 CALL (FT(0,.0004.4008(1.)0.1VM) 19 CALL 1RANS(12.)) 40 CALL 1RANS(12.))</td>	CALL (ERAC(11.1)) CALL (EFI(-1,.0,.) IF(WARS(17.0) V(*)0000. (0 In 3) 17 CALL F#(17(-10,.) 17 CALL F#(17(-100) 18 CALL (10.24), xCAM 74 CALL (FT(0,.0004.4008(1.)0.1VM) 19 CALL 1RANS(12.)) 40 CALL 1RANS(12.))
10 A 7	JE (J-1-11 10,10,6 INVRS=J RETURN K=(10,17,2) JF J=K G0 10 G I=K G0 10 G SURGNIT[MF UP(MAP+M+L+K) OIMPONIT[MF UP(MAP+M+L+K)	CALL VERSION (1.1.) CALL VERSION (1.1.) IF (MARS, 17.0) VI=10000. (0) IN 31 17 CALL VERSION (1.1.0.) IF (MARS, 17.0) VN=10000. (0) IN 31 17 CALL VERSION (1.0.) IF (MARS, 17.0) VN=10000. (0) IN 31 18 (1) IN 12.0.0. 74 (1) IN 13.0.0. 74 (ALL TERIN, VERM, WERFEL, 10.1VM) 19 (ALL TRANS(11.)) WE THRN FMD SIMERONTIME TRINSING TALL VERSION COMPTON VARES / X.R., XME, XX, VALVO
10 A 7 R	JE (J=1-11 10,10,6 IWV85=J RETURN K=(1+J)/2 F J=K G0 G0 T FMD F KINRGNITIME UP(MAP+M+L+K) O OTMERGIAN MAP(1) Lak	CALL (FRAC(1-1,-1)) CALL (FRAC(1-1,-0,-)) IF(WARK, IT,0) V(*)0000. (0) IN 31 17 CALL F#I1(-1,-0,-) IF(WARK, IT,0) V(*)0000. (0) IN 31 18 CALL (I-1,-0,-) 19 CALL (I-1,-0,-) 10 CALL (I-1,-0,-) 11 CALL (I-1,-0,-) 12 CALL (I-1,-0,-) 13 CALL (I-1,-0,-) 14 CALL (I-1,-0,-) 15 CALL (I-1,-0,-) 16 CALL (I-1,-0,-) 17 CALL (I-1,-0,-) 18 CALL (I-1,-0,-) 19 CALL (I-1,-0,-) 10 CALL (I-1,-) 11 CALL (I-1,-) 12 CALL (I-1,-) 13 CALL (I-1,-) 14 CALL (I-1,-) 15 CALL (I-1,-) 16 CALL (I-1,-) 17 CALL (I-1,-) 18 CALL (I-1,-) 19 CALL (I-1,-) 10 CALL (I-1,-)
10 A 7 R 	IF (J-1-11 10,10,6 INVES=J RETURN K=(1+J)/2 IF IF (M-MAP(K)) J=K I=K GO TO 9 I=K FMO INVESTOR SUMEDINTINF (IPEMAP+M+L+K) O Otherstore MAPH MA=MAP(1x) INVESTOR	CALU «RA=(1-1,-1) IF (MARS,17,0) VI=10000. (0,10,3] 17 CALU «RE(1-1,-0,-) 18 CALU «RE(1-1,-0,-) 19 14 17 18 19 19 19 19 19 19 19 19 19 19 19 10 19 19 19 19 19 19 19 19 19 10 11 12 13 14 15 15 19 10 1111 111 111
10 A 7 R	JE (J=1-11 10,10,6 INVEST_J RETIRM RETIRM Re(1+J)/2 JE (M-PAPK1) Jek GO TO 3 FMO TINRONTYME IMPIMAPONILICKY OTMENSION MAP(1) LX=1 Matm MRAPH(1X) Call TR(MALMR)	CALL (FRAC(1).)) CALL (FRAC(1), V)*(0000. (O In 3) 17 CALL (FRI)(-10.) 18 CALL (FRI)(-10.) 19 CALL (FRI)(-10.) 10 CALL (FRI)(-10.) 11 CALL (FRI)(-10.) 12 CALL (FRI)(-10.) 13 CALL (FRI)(-10.) 14 CALL (FRI)(-10.) 15 CALL (FRI)(-10.) 16 CALL (FRI)(-10.) 17 CALL (FRI)(-10.) 18 CALL (FRI)(-10.) 19 CALL (FRI)(-10.) 10 CALL (FRI)(-10.) 10 CALL (FRI)(-10.) 11 CALL (FRI)(-10.) 11<
10 A 7 R 1	IF (J=1-11 10,00.6 IMVRS=J RETURN K=(1+J)/2 IF IF (M-MAP(K)) J=K G0 10 I=K G0 10 T=K G0 10 G0 10 G1 10 G1 10 G1 10 G2 10 G3 10 G4 10 G4<	CALL (FRAN(1-1)) CALL (FRAN(1-1)) IF(WARS, IT.0) 17 CAL (FRI) 17 CAL (FRI) 17 CAL (FRI) 17 CAL (FRI) 18 CAL (FRI) 19 CAL (FRI) 19 CAL (FRI) 19 CAL (FRI) 19 CAL (FRI) 10 CAL (FRI) FMD COMPON (VARC) VV0+V0 VV0+V0 TV0+0 QUAPE
10 A 7 R 1 2	IF (J-1-11 10.10.4 INVRS=J RETURN K=(14.377) IF	CALL (FRAN(1).)) CALL (FRI-10.) IF (MARK, IT.0.) VI=10000. (0, In 3) 17 CALL FHI1(-10.) IF(MARK, IT.0.) VI=10000. (0, In 3) 18 CALL SET(1, SET(0,
10 A 7 R 	JF (J-1-11 10,10,4 IMVRS-J RETURN K=(1+J)/2 F J=K G0 G0 T0 FMD G0 C(IRC)IT/HF UP(MAP-M+L+K) DIRK G0 G0 T0 FMD G0 C(IRC)IT/HF UP(MAP-M+L+K) DIRK G0 C(IRC)IT/HF UP(MAP-M+L+K) C(IRC)IT/HF UP(MAP-M+L+K) C(IRC)IT/HF UP(MAP-M+L+K) C(IRC)IT/HF UP(MAP-M+L+K) C(IRC)IT/HF UP(MAP-M+L+K) C(IRC)IT/HF UP(MAP-M+L+K) MB-MAP(IX) CALL CALL T(IRC)A-MR) IF (IX-K1 MAP(IX) CALL CALL T(IRC)A-MR) IF (IX-K1 MAP(IX) CALL MAP(IX) CALL CALL X1-Z RETURH MAP(IX)	CALL (FRAN(1-1)) CALL (FRAN(1-1)) IF(WARS, IT,0) (0, 10, 3) 17 (ALL FWIT(-1.+.0.)) IF(WARS, IT,0) 17 (ALL STIC) 18 (ALL STIC) 19 (ALL STIC) 19 (ALL STIC) 19 (ALL STIC) (ALL STIC) (ALL STIC) (ALL STIC) (ALL STIC) (ALT STIC)
10 6 7 8 1 2 3	IF (J-1-11 10,10,4 INVEST_J Reflek Reflek Reflek K=(1+J)/2 I.ak J=K G0 J=K G0 T=K G0 G0 I.ak G10 G T=K G0 G10 G T=K G G10 G Tak G G10 G Tak G G10 G Tak G G117 G Hence April 10 G Cail TR(MA, MR) G T= (1 xx+1, 3x, 2x, 7) REflike MAPU[X] = MAP_1 G LX=1 LX=1	CALU «RAS(1-1,-1) IF (MARS,17.0) VI=10000. (0,10,3] 17 (11, FMIT(-10.) 18 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 19 (11, 0, 1) 10 (11, 0, 1) 10 (11, 0, 1) 110 (11, 0, 1) 111 (11, 0, 1) 111 (11, 0, 1) 111 (11, 0, 1) 111 (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) (11, 0, 1) <t< td=""></t<>
10 6 7 8 1 2 3	JE (J=1-11 10,10,6 IMV85=J RETURN K=(1+J)/2 F J=K GO GO To FMO CITRENTITIEF UP(MAPO,M,L,K) DIMFMS(INW MAP(1) LX+1 Mawm MA=MA IF (1X-K* 3,2,2 VETURE LX+1 May May May May IF (1X-K* 3,2,2 VETURE May	CALL (FRAC(1-1, 0)) [F(WARK; (T, 0)) V(*)00000. (O, 10, 3) 17 (ALL F#11(-1, 0, 0)) [F(WARK; (T, 0)) V(*)0000. (G) 10, 3) 17 (ALL F#11(-1, 0, 0)) 18 (ALL (T, 10, 0, 0)) 19 (ALL (T, 10, 0, 0)) 10 (ALL (T, 10, 0, 0)) 11 (ALL TRANS(10, 1)) 12 (ALL TRANS(10, 1)) 13 (ALL TRANS(10, 1)) 14 (ALL TRANS(10, 1)) 15 (ALL TRANS(10, 1)) 16 (ALL TRANS(10, 1)) 17 (ALL TRANS(10, 1)) 18 (ALL TRANS(10, 1)) 19 (ALL TRANS(10, 1)) 19 (ALL TRANS(10, 1)) 11 (ALL TRANS(10, 1))
10 A 7 A 1 2 3	IF (J-1-11 10,10,4 IMVRS=J RE1(RM K=(1,1,1/2) 1,7,7,8 J=K 1,7,7,8 J=K 1,7,7,8 J=K 1,10,0,0,0 G0 10,9 1=K 1,10,0,0,0,0 G0 10,9 1=K 1,10,0,0,0,0,0 G1 10,9 1=K 1,10,0,0,0,0,0,0 G1 10,9 1=K 1,10,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	CALU «EFI(-1,,a,) IF(WARS,IT.0) VI*10000. (0,10,3] 17 CALU «EFI(-1,,a,) 18 CALU «EFI(-1,,a,) 19 CALU «EFI(-1,,a,) 19 CALU «EFI(-1,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-1,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-1,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-0,,a,) 19 CALU «EFI(-0,,a,) 10 CALU «EFI(-0,,a,) 11 CAMPAN 11 CAMPAN 11 FI(-1,,a,) 11 EFI(-1,,a,) 11 EFI(-1,,a,) 11 EFI(-1,,a,) 11 EFI(-1,,a,) 11 EFI(-1,,a,)
10 A 7 R 1 2 3	JE (J=1-11 10,10,6 IMV85=J RETIRM K=(1+J)/2 F J=K G0 G0 T0 I=K G0 G0 T0 FMD FMD G1NRG011716 IP(MAPD-M+L+K) TMARM T0 G0 T0 FMD G0 G1NRG011716 IP(MAPD-M+L+K) TF (I=K) G1NRG011716 IP(MAPD-M+L+K) TF (I=K) G1NRG011716 IP(MAPD-M+L+K) TF (I=K) G1NRG011716 IP(MAPD-M+L+K) TF (I=K) G0 T0 G0 T0	CALL (FRAC(1),1) CALL (FRI-1,.0,) IF(WARK, IT,0) VI*10000. (O IN 3) 17 (ALL F#II(-10.) IF(WARK, IT,0) VI*10000. (G) IN 3) 18 (G) IN (1,2.26), KGAM 24 (ALL SIFI(0,.0,000, G)) 19 (ALL SIFI(0,.0,000, G)) 10 (ALL SIFI(0,.0,000, G)) 11 (ANS(1)) COMPON (VARK) VVREVN VREVN 1 1 (III, 50,0) @TIMN CheTV(//WHEW

-18-

	CSRAHJOLTA	~	RINARA SEARCH FOR INTERVAL 7113-7133 13-1+13 WHERE & DECHNA
	V##\$N#VVII#C\${VV# VI) • 1 ,1• 1
	45 1000	•	Y=(1+1)/2
,	VH 2-1/7	1	(F(S-/(F)) /:/:F
	hhi		
	<u>Climpiliti </u>	ų.	1+(1-1-1) 10.10.6
C.	THIS COMPOSITING CHECKS WHETHEN & MILLECOLE COLLIDES WITH THE SEGNER	٢	END OF ATTARY SEARCH
ć	FROM TO THE THE THE THE YESTATE . 11 IS A PARAMETER OF STORATION.	30	
<u>_</u>			/1.4=7.3=/1
	The/ Sally		x1=(x+71)/7].] x.j=(7.j=x)/71.j
	VI # {# }11+H		F]=F(1)
	1+((v+-5014)*X1) 2.1/.17		F (#F (1) 1)F(##/ #DF(])
<u>-</u>	[] = VN+ V / + N / H - (< + H) + + 2		0+1=/1,1=0+(,1)
•	C7=4(1+V4-A) + 5+11H		(.]=()F(-2,+F) (.]=()F(-2,+F)
	(3441) /.4.7		H]=3,*F]=DF[
4	1+1(2) 4+1/+4		H,1s3,0F,J=0F,J CHSULETC 197104119X10X14(C19X14H1)9X19X1
<u> </u>			KF TILKI
7	C7=C7/C1		
	(,3=(3/() DIS(R=(20(2-(.3		CUNNON /STORE/ NCL. MCP. NAP(30). 7(5000). 7(5000). 11(5000). V(5000).
	1+1015643 37.0.9		X W(5000)+10(5000)
<u> </u>			CUMMON /TIME/ TOTOTATA TENA TENA TENA UTAPATAEP
	TH EN=+ 1015-C2		CUNNOW /HIST/ FU(10.25).FV(10.25).FW(10.25).CFU(10.25).
	1F (1M4X+17+0) 60 10 17		11.FW(10+25)+06(23)+06(
	TTETHIN		DD 6 1=1.MC1
	(d) 10 14		
14	JF(1)T-TTJ 17.15.15		LS17F=ML 457+3-HF1KST
15	CALL TRANSETTOD	,	F{{\$175} A\6+7 D#DT/FLOAT{{\\$175}
	IF (TT.IT.TMAY) GO TO 12		DP R MEMF 1PST. MI AST
17	RF Tellew		
16	CALL TRAPS(TT+1)		WNew{M}
	HFTIRM]		MTAG#MAA(1),32)/2 Tw. (MTA(1),1,1,2
	SURRINITINE ENTIC, ST		CALL STETT-1-5-0-3-FULT-L)+10-07-04-1
<u>.</u>	SKINNER 1970		CALL SIFT(-1.5,0.3) (V(1.1),10,07,V)
	CEMMEN AABZA XU*AU*XH*AH*UH*AH*AH*UH* CEMMEN ACHMZA CH*ZIM*LM*ZH*CEMELTANI DM*AKAZACEMELTAALAILUMZAA		
	NATA (C/16384/	2	F{W}AG/2)
	CEMPON /KAND/ K+G VN=CT+SORT(-ALDG(RANDI(R)))	4	CALL STET(-1+4+0+4+CEN(1+1)+10+DT+H4)
	VI=GRERANDG(G)		CALL STET(-1.5.0.3.(FV(1.1.).0.01.VF)
	tj#=f \$VM→\$\$V] v#=f # vT + \$\$VN	5	IIR(F jelik(I)+iikal)
	WHECKENAMIG(G)		VK(1)=VK(1)+VF+D
	X()+ XM		
	VIITYM		
	10H+1C+(10H/1C)		YVA(I)=VV4(I)+VH4VH-D
	KF TIRM		#\$#{ }}=###{{}}+#############################
	SURUNITINE REFI (XM.YM)	4	CIMITATI
-	CIMMON /VARS/ X0. Y0. XH. YM. IH. YM. WM. IDM		<u></u>
	Amufike2"+{[iweXw+AkeAk]		SUPERINTING FIT(1.0)
	nn - nn - nn ibne an I in = fin - Anlyk he Xn		CIMPON /VAPS/ XD.YD.XM.YM.IV./M.MM.II.M.
	X()=XM		COMMENT / TIME/ TOTO AND
			<u>x wisouoj, inisouoj</u>
	RE TIRN		}} {A^-+AF} 3.3.1
	END		L HRITE (A.2)
r	SKIMMEN 1470		TENTET
	INTEGER R.G.		
	X StilsSif2*XCR/isXCR/isXCR5*YCR1*YCR5*YCR5*YCR6*YCR5*YCR5*YCR5*YCR5*YCR5*YCR5*YCR5*YCR5		7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	X \$101.5102.5103.5104.5105. 5113.5114. HADIN,01541. XHI.YHI.		CALL THSENS
	C ()MMDW /VARS/ X0.20.2M /M.IM.VR.WA.TOM		τνη κειτικμ
	COMMON /CONS/ CU.SIA-SIA.CR.CT.ACCON.+HES.CIWI(26).TCONS.251		Crinumit No CIFTIA, 0, 1, 1, 1, 41
	CIMMON /TIME/ T.DI.DI.M.TEO.DISM.TEMD.DIKP.TREP	5	HISIOURAM ARRAY OF DIMERSION NO IF ASKEID I INFREX IS THE
	CIMANH /KAND/ R.G	ŗ	7 IS MUDED TO XERS. IF & FALLS BUTSTON ADWAY PANGE IT OF TWINDLES
	U() Y 1=1*M(N) NIMETINIKI(NOUI)	ſ	11. INF NEAREST FAILERS. AIMENS(AF XIN)
	8_XU=xCB1		relf1x((x-3)/0)+)
	¥{1=KANTN\$KAND}{{R}} +{{ASP}{{TN\$KAND}}{{R}}	3	+{*} 7+7+1 + {H=k] 3+6+6
4	HYP= \$0#1 (D1 \$W1 #D1 \$W1 +YD#YD)	:	N#1
	AX1=U1CM1 \HAN	2	(d) }0 4
	2+YX1+SIA+RANDGIG1	<u> </u>	3(3)23(4)+7
-	[F(/-1,544AWDL(R)] H.5.5		48 [086
	VM+V# [+ \$] 488 AMIG(G)		FINCTION INTREXT
	MM= () R&RANDG(G)		(NHAID) / 2200/ R
	CALL INA-SIDTAZANDLIRII		[+ (x-F)(AT(1)-RAND((4)) 7.].]
	1 1,1x1+++ (1 ++++++)	1	101+1 TNTU-1
	1841100180273 001 111 0 48118600443	,	RF THRM
91	6 FINGATEIN STARRIN IN LOCIS		FINCTION #ANIX-1111

When the second se

 $\begin{array}{c} (a) 10^{-} \mu \\ \leftarrow (z+1) + [1(1,1,6,7)] \\ \leq 10^{-} \mu \\ + \alpha \\$ 50

. <u>.</u> .

5

-29 -

1 i 1 CALL HISTOLP+CEH-CEV+CEN+L3 YFI=YFI+.4656613 F-9 CALL HISTSTUDGEN.GEVAGENALS DD 71 [H=110 FUIIDL = FUIDCEVIDED FUIIDL = FUIDCEVIDED FUIDED FUIDE 1X#47 HANSE#YF3 HF31IRN 71 ENII FIIN(TION RANDRIX) KANIR =2.*RANDI(Y)-1. RETURN 77 END FUNCTION UMAXIX.L. Y+X(1) DO 1 1=2.5 IF(Y-X(1)) 2.1.1 Y=X(1) CUMTINUE UMAN-Y RETURN EMD SIRARDINI TIME RAR(P+L+X) DJMENSIAN P(1) PATA STAV: ALAMKYAMO N=TFLX(FE(TATIL)-1+F-A)=X)+1 OU 1 ==STAR P(1)=STAR ١ RFTIIRN END -----N=N+1 DD 2 1=N+1 P(1)=BLANK 156N#0 IFLA.GF.O.) ISGN#1 RETURD 2 DILERIANC HETURN END SUBROINTIME HISTI(F.M.P.K.(.T) C F IS THE NEVECTOR UNERE THERTOURES ARE STOKED C F IS A 120XN ARRAY WHERE THE INTSTORAM RAKS WILL AF SET UP C K IS INF LINTIAL CHAN. LOCATION. DE FACM PAG C L IS THE LEMMEN OF THE RAKS C L IS THE LEMMEN OF THE RAKS C L IS THE LEMMEN OF THE RAKS C T IS THE LEMMEN NERE THE TOTAL UILI AL STORED DIMENSION P120.1).F(1) UBINENXIE.N. 1 (1) 121.4 2 SHO KLEKAL DO 1 121.4 2 SHO KLEKAL DO 1 121.4 2 SHO C ALL RAFLP(K.1).L.7/00 1 PIKEN. RETURN END SUBROUTINE DUR'
 EHD
 CHEMPAN
 SUBRADITINE DURP

 SUBRADITINE DURP
 CHEMPAN
 STORF / NCL.4CP.P(120.50)

 CHEMPAN
 VSTORF / NCL.4CP.P(120.50)

 SLOILSSLISSION
 SCORE

 X SLOILS(D.2.5CA)
 SCORE

 CHEMPAN
 VSTORF

 COMMIN
 VSTORF

 CHEMPAN
 VSTORF T=S RFTURN SURADUTIVE HISTA(P,A,A,C,1) DIMENSION 0(120,1), A(10,1), A(10,1), C(10,1) DI 6 Jel-10 D(1, Jel-10, A) CALL HISTI(A(1,1),10,P,2+,20,TA) CALL HISTI(C1(1,1),10,P,2+,20,TA) CALL HISTI(C1(1,1),10,P,2+,20,TA) CALL HISTI(C1(1,1),10,P,2+,20,TA) HRITE(A,1) ((F(1,1),1-1,1,64),1-1,10) FORMAT(10(F10,5,55,20A1,F10,5+,25,20A1,F10,5/) WRITE(A,2) TA,TA,TC FORMAT(7H TOTA, S+28%,F10,5+,25%,F10,5+,25%,F10,5/) FTO END SURROUTINE HISTACP.A.A.C.I. WRITE(A.1) FORMAT(*1*,49X,*SKIMMER_197)*//) WRITE(6.GFF] WRITE(64,6F) WRITE(64,6F) WRITE(64,7FA) WRITE(64,7TM) FLT=TFO PREPARATION OF HISTOGRAMS FOR OUTPUT THPREO. (VI 21 1=1:50 I=LOC(XCA+,1=0ABPR) I=((,1XCA+,1=0ABPR) 4 RPRF1(1)=APRFL(1)/(CIWT(L)*FIT+6.7P31H*(1-0.5)*DAPR) THPR=0 00 22 1=1+10 I #LOC(0+I#DHPR) THPR=THPR+HPRFL(I)/CLWT(L)/FIT Telo(U); ####PR(11)/CLWT(L)/FIT HPPR:HPPR+HPR(11)/CLWT(L)/FIT PNH=1,57079Y(CR24P2A+ATCONS(1)/VOI(1)/CLWT(1) DI) 24 1=1.WCE FWT=1,57079Y(CR24P2A+ATCONS(1)/VOI(1)/CLWT(1) DI) 24 1=1.WCE FWT=1,1.WCE FWT=1,1.PCE FWT=1,1.PC 1 1 23 VVR(L)=VVR(L)/FLT WWR(')=WWR(L)/FLT 5
 4n
 P[1,J]="+*OPPR

 WRIFE(A,+J)
 ([P]1,J]+]=1+[02]+[=]+50)

 47
 FIRMATI50(F10,5

 48
 FIRMATI50(F10,5

 49
 FIRMATI50(F10,5

 47
 FIRMATI50(F10,5

 48
 FIRMATI50(F10,5

 49
 FIRMATI50(F10,5)

 50
 FIRMATI50(F10,5)

 6
 FIRMATI50(F10,5)

 6
 FIRMATI50(F10,5)

 6
 FIRMATI50(F10,5)
 FORMAT X (1H).45%. VFLOCITY HISTOGRAMS FOR CELL '.14/.' THE FIRST HISTOGR XA TRIPLE REFERS TO MOLECULES WHICH MAVE UNDERGONE NO COLLISIONS T XN THE FLOWFIELD.' THE SECOND TO MOLECULES WHICH MAVE UNDE XR-COVE AT LEAST ONE COLLISION, AND THE THIRD GIVES THE SUM OF THE E XIST TWO.'/ 'LOWER CELL MOLMORARY VALUES APPEARS AT THE RICH THE FA XIEFT, THE AVERAGED NUMBER OF MOLECULES APPEARS AT THE RICHT OF FA XCH RAR.+//) CALL HIST3(P.FN.FV.FW.F)

22.30

1

ł

-31-

÷

APPENDIX 2

Typical Output

;

A2-1

1

ı :

Note: The "Histograms for cell - " is done for each of the 25 cells.

-31-

SKI WHER 1971

	$\neg \gamma$										Т														Т									T	
33241 MAD # 17 107 125 159 185 262 310 424 497 687 742 826 969 890 904 948 34610001000100010001000100010001000	IN LOC 34363 MAP= 21 111 127 202 220 273 314 442 514 676 756 815 847 879 500 938 96310061010161025132410351077107026 32408 MAP= 16 116 136 229 244 316 350 473 540 695 776 835 877 897 926 953 92610411044105410771077107710771078	33012 WAPE 22 101 127 232 249 328 354 462 532 682 774 819 869 991 923 961 9471044107410711102111411131119119 33012 WAPE 23 105 132 209 259 286 408 465 613 712 794 820 851 877 920 9471003101910111071009411011101	3656 MAPE 22 119 138 200 219 261 284 389 442 547 57 775 802 933 845 011 966 992 90510411055107510941095 30550 MAPE 22 119 138 200 219 261 284 389 442 547 572 728 775 802 902 902 902 902104110511051102110211021	33530 MAP 31 100 127 207 228 275 299 313 430 561 572 720 112 041 FRB 952 966 746 746 746 047 0410711100111551156	40300. MAP. 28 [13 135 204 231 304 326 346 432 556 710 745 790 833 869 916 945 9491005101610741070110911391164	459// 14/ 31 12/ 140 215 260 311 343 437 460 551 673 753 762 815 850 848 925 965 975 93710151034107211131150	51370 MAP 29 123 146 238 259 238 326 405 430 521 641 743 778 501 833 570 504 933 57 564 950100310761129 51370 MAP 29 123 146 238 259 238 326 405 430 521 641 743 778 501 833 570 564 933 570 564 950100310761129	2026 MAPE 19 116 153 244 274 317 340 401 427 494 602 685 733 759 786 830 844 885 401 409 434 444 4114411441100	43122 MAP 27 120 145 242 268 323 344 395 424 497 401 671 727 144 314 44 314 434 494 494 491 44 1710441100 43122 MAP 27 120 145 242 268 323 344 395 424 500 671 671 671 741 741 741 741 741 741 741 741 741 7	27430 MAP 24 125 161 240 249 247 293 345 373 442 349 017 025 047 119 760 161 012 01 071 011 011 010 102 102 10 21430 MAP 24 125 161 240 249 774 293 345 373 250 551 410 452 465 717 741 741 741 814 813 813 651 677 677 675	28063 MAP= 36 124 148 230 245 245 313 346 365 447 751 510 522 557 111 751 717 717 557 557 777 557 777 757	101 10 10 10 10 10 11 11 12 238 296 334 355 406 522 603 654 681 710 756 778 814 837 441 864 878 905 9691066	27059 MAP 37 127 151 241 258 307 319 352.369 417 528 603 655 602 712 754 775 812 839 859 879 902 9481068	40664 MAP 25 135 175 255 277 321 337 390 393 455 514 596 531 765 769 649 141 177 300 874 374 974 3740 374100 	37029 HAP 31 105 133 258 268 331 347 401 41 427 435 25 650 659 770 781 405 552 775 883 495 913 4311010105	1949 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	37233 MAPE 23 108 144 221 243 306 342 407 424 457 564 626 674 690 75 112 645 930 910 920 930 947 971 9591162	38265 MAP= 24 106 131 182 205 268 297 375 399 425 528 613 654 487 177 776 814 847 171 441 444 442 457 156 814 848 451 551 172 1441 1441 1451 1451 1451 1451 1451 145	3991 MAP# 24 113 147 231 248 443 314 341 400 471 170 070 171 170 070 171 171 170 170 1	4 IN LUC 3640 LUC 364	29700 MAPE 32 109 152 221 245 310 330 331 395 652 578 631 640 707 718 744 610 450 430 430 430 471 014 1113	• 30441 MAP= 29 120 149 220 239 280 381 340 341 440 450 452 457 716 758 802 447 347 349 597 519 5421700	25078 MAP= 23 15 14 21 23 24 25 34 55 34 367 413 54 601 656 687 716 75 73 333 859 877 891 004 93410241186	2695 MAP 31 129 155 248 264 303 326 366 383 439 549 634 693 715 750 709 433 870 493 504 903 504 96010571214	25812 MAP= 24 107 146 200 274 315 329 368 389 444 504 642 047 761 77 77 77 77 77 77 77 77 77 371 377 470 771 377 772 771 777 77 77 777 777 777 777 777	37866 MAP= 24 DC 14/ 248 248 245 245 393 394 447 45 54 648 442 671 728 760 400 437 446 444 412 412001138	527647 MAP= 26 115 152 201 224 258 273 304 321 356 484 559 415 444 670 733 762 801 837 947 858 873 904 9971124	R IN LOC 2021: 448- 36 137 155 340 355 307 324 358 394 522 596 653 685 710 767 906 842 871 378 A87 900 93510321155	140011 MAP= 47 170 189 302 320 371 386 442 448 471 569 530 643 711 742 706 835 875 896 901 913 928 96010341154	APPWNDIX 2 TYPICAL OUTPUT	Note: The "Histograms for cell - " is done for each of the 25 cells	A2-1			UNIVERSITY OF TORONTO
T=0.3		1=0	1=0-2. 1=0-3(T=0.3	1=0.4		T=0=5	T-0.2	1=0-1	T=0.2	T=0.2	ERROR	J =0 = 2	T=0.4	11=0.3	1=0-3	E -0-10	JT=0.3	01=0=3	ERROR JT=0.3	11=C.2	0°3	0T=0.2	1.40.2	01=0.2	01=0.3		ERROR	D1=0.4						

ļ

0

Berners as the bar ways

 PFI=
 1,1499996
 015NS=
 7.0000000
 0.5499995
 5.L1=
 0.699999999
 xCB1

 -1,0000000
 xCCB2=
 0.5499990
 xCCB1=
 0.69999994
 xCCB1=
 0.5499994
 xCCB1=

 1,0000000
 xCCB2=
 0.5000000
 xCCB1=
 0.4774990
 xCCB1=
 0.47449994
 xCCB1=

 1,5499995
 xCCB2=
 0.5000000
 xCCB1=
 0.4774990
 xCCB1=
 0.47449994
 xCCB1=

 1,5499975
 xCCB2
 0.5409990
 xCCB1=
 0.47449990
 xCCB1=
 0.47449990
 xCCB1=

 0,5499975
 xCCB2
 0.517467
 xCC11=
 0.47449990
 xCCB1=
 0.47449990
 xCCB1=

 0,5499975
 xCCB2
 0.5174670
 xC11=
 0.47449990
 xCCB1=
 5.2703=

 0,5499975
 xCCB2
 0.19642842
 xCL13=
 0.492457670
 xC114=
 0.492445099
 xO15

 0,7012
 0.71714
 0.19442842
 xC113=
 0.492474509
 xO15
 0.19767691
 0.1504191
 0.7051916
 0.19767699
 xO15
 0.19767699
 xO15
 0.197767919
 0.19777599
 xO15
 <td UNIVERSITY OF TORONTO 70.111633 152.27275 ,DTRP= • PRFS= 1.00000000 18,919754 344,67310 +TEND= 12+00000 33.062733 + 61+450516 114+94041 + 3 19+694220 + 3 NUMBER/TIME THRU URIFICE = 137.657980. THEORETICAL FIGUPE FOR NO SKI446P INTERATION = 17. UTUG2 • DTSM= 1+0000000 7469.8906 1000+K= 853718280+G= 972232627 ANNUALER PER UNIT TIME 1858.1342 A2-2 + TEQ= 4+ 000000U +TCPNS= • 19.51538 22.30728 18.67900 18.51970 21.52887 15.24042 17.2P505 14.51355 17.47H06 9.53 750 175.200.77 SKEMMER 1971 57. 240784 17. 905273 675. 27612 •NST= ,DTM= 0.33333331 FLUX PROFILE AT ORIFICE ****************** 的复数医盐酸盐 医普鲁普斯氏体 (新武学校在中华学校学校学校 **************** 70.453018 17.935638 146.48874 1795,A* 2.0000900 ************ 0.34669107 12.000000 ************ 23. 484360 33. 975586 253. 22893 • 10.137089 .TREP= 1795,86= DISTANCE FROM AXIS 1.0000000 . 0.62501000E-01. 1.0000000 . H 404.85156 1.0000000 T= 12,303652 1,0000000 5 END 6 GED PF1 = 1, 1499 -1, 0000000 2.9284039 2.5216074 6END 6CON 51。988815 53。675018 -0-98124856 0-23303765 61. 632446 0.02750 0.05500 0.08250 0.13750 0.13750 0.13750 0.13750 0.13750 0.22000 0.22750 0.27500 TOTAL SEEC SEC BR-GEND CTIN 50

۲ ۲

ł

. •

-33-

BEAM FLUX PROFILE AT FAD OF FLOAFJELD

.

BISTANCE FROM AXIS	TIME	$\overline{}$
0, 0323694994594999494949494949494464444444444	• 16674 • 55566	
0.098574000000000000000000000000000000000000	•556.84 •235.87	_
0.1642899999509999999999999999999999999999999	• 981 68 • 981 68	
Ов 1.) У 100 байтараатараатараатараатараатараатараата	• 75776	
0 <u>= 2 6294,000000000000000000000000000000000000</u>	• 22249	
	• 60902	
0. 0. 10. 10. 10. 10. 10. 10. 10. 10. 10	0 456 2 O	
10 ± 501 ± 1 ± 44500 ± 44500 ± 4500 ± 4500 ± 4500 ± 4500 ± 5000	044454	
. 0° 45997 88888888888888888888888888888888888	•382#1	
	•68395	
	• • • • • • • • • • • • • • • • • • •	
C = 591 40 ***********************************	.16674	
	- 75681 - 75681	
	• 94725	•
	21212	
0° 75567**********	a 440 7 7	
0.7853.************************************	, 2c7R9	
	• 50003	
	•+FU+2	
G. 91995**********	31920	
0 6 6258000000000000000000000000000000000000	14562	
	06725	
	40541 40505	
1.08423sessess	21540	
	. 36570	
	. 27055	
	. 23006	
	2 F 7 C 9	
	11920	
	14769 .	
	. 37451	
	.18274	
	14752	
1.47849******	1-964	
	. 16668	·
	1328	
	20448	
16.642779eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee	94419	
UNDER/TIME 11 REAM 28-54164	41634	•
	•	
A2-3	-	
	e	

- 34-

...,

UNIVERSITY OF TORONTO

. . . .

م الندي^{ا ا}لأسلاق ا

with the second states and second

Ł

2

0.000 0.0000 0.000	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	1.01412 0.795412 0.97511 1.79545 1.99513 1.97545 1.991504 1.97545 0.95213 1.97545 0.97513 1.77055 0.97513 1.77055 0.97513 1.77055 0.97513 1.77055 0.97513 1.77055 0.97513 1.77055 0.97513 1.77255 0.97513 1.77255 0.07551 1.77255 0.07551 1.4960 0.07551 1.4961 0.07551 1.4961 0.07551 1.4961 0.07551 1.4961 0.07551 1.4961 0.07551 1.4961 0.07551 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 1.19536 1.4961 <		0.75.46 1.95595 1.95595 0.62593 0.62593 0.62593 0.62593 0.629435 2.19435 2.98384 0.67336 0.67336 0.67336 0.67336 0.67336 1.9652 3.67065 3.70065 3.7	
0.0000 0.0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0.97511 0.97511 0.4502 8.91375 4.917 4.4027 8.91375 4.917 12,34505 0.97513 4.917 0.74295 0.97670 4.917 0.74295 0.97713 4.9760 0.74295 0.07704 4.977 0.74295 0.07704 4.971 0.74295 0.07704 4.971 0.74295 0.037371 4.971 0.74295 0.3314950 9.14961 0.74517 0.3314950 9.14961 0.74517 0.3314950 9.14961 0.6157 0.33314950 9.14961 0.6157 0.33314950 9.14961 0.6157 0.33314950 9.14970 0.6157 0.33314950 9.14970 0.6157 0.33314950 9.14970 0.6157 0.33314950 9.14370 1.49709 0.330561 9.14370 1.49709 1.495761 9.14370 1.49709 1.495761 9.14370 1.49709 1.495761 9.14415 1.49709 1.495761 9.14415 1.49709 1.495761 9.14415 1.497045 1.495761 9.14416 1.495761		2. 98463 1. 75595 0. 0. 75595 0. 0. 75595 0. 0. 7435 2. 91943 0. 91963 0. 91963 3. 14963 0. 91652 3. 4117 10. 14162 10. 14162 11. 70163 11. 70163 12. 70163 12. 70163 13. 70163 13. 70163 14. 70163 14. 70163 15.	
00000 0 0.93593 0.0001 0.93593 0.0001		1.99375. 0.94047 1.99375. 0.94047 0.98213 0.74265 0.98213 0.74265 0.98213 0.74265 0.97321 0.74265 0.97321 0.74265 0.97321 0.74265 0.97321 0.74265 0.97321 0.74265 0.97513 0.74265 0.97513 0.74265 0.97651 0.6157 0.97651 0.6157 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 0.00127 1.49707 0.11.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995767 1.4961 1.995777 1.4961 <td></td> <td>1. 75595 0. 62593 0. 62593 0. 62593 2. 19495 2. 19495 0. 98394 0. 57336 0. 57336 0. 57336 0. 57336 0. 57336 0. 57336 0. 57336 1. 1. 10. 14162 1. 20163</td> <td></td>		1. 75595 0. 62593 0. 62593 0. 62593 2. 19495 2. 19495 0. 98394 0. 57336 0. 57336 0. 57336 0. 57336 0. 57336 0. 57336 0. 57336 1. 1. 10. 14162 1. 20163	
0.0000 0.0 <th0.0< th=""> <th0.0< t<="" td=""><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>R.91504 8.91504 12,94533 0.91503 14,70042 0.91513 14,70042 0.91513 10,74295 0.477541 10,74295 0.477541 10,74295 0.37371 10,74295 0.477541 10,74295 0.37371 10,74295 0.37371 10,74205 0.37371 14,960 0.374555 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961</td><td></td><td>0.62503 0.0 2.09435 2.19435 2.19435 2.19435 0.0 0.0 3.14963 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0</td><td></td></th0.0<></th0.0<>	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	R.91504 8.91504 12,94533 0.91503 14,70042 0.91513 14,70042 0.91513 10,74295 0.477541 10,74295 0.477541 10,74295 0.37371 10,74295 0.477541 10,74295 0.37371 10,74295 0.37371 10,74205 0.37371 14,960 0.374555 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 0.01772 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961 11.95773 14961		0.62503 0.0 2.09435 2.19435 2.19435 2.19435 0.0 0.0 3.14963 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 0.57335 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	
00000 00000 000000 0000000 0000000 0000000 0000000 0000000 0000000 0000000 0000000 0000000 0000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 00000000 000000000 000000000 0000000000000000 000000000000000000000000000000000000	0000 00 0.73233 0.74763 0.74763 0.74763 0000 0.00 0.00 0.00713 0.00713 0.077541 0.747541 0000 0.00 0.007513 0.007513 0.077541 0.747541 0000 0.00 0.007513 0.007513 0.007513 0.01774 11 0.007 0.007513 0.007513 0.007513 0.01774 0000 0.007133 0.007513 0.007513 0.007513 0.007513 0000 0.007133 0.007513 0.007513 0.007513 0.007513 00000 0.001 0.001 0.001 0.001 0.00173 00000 0.001 0.001 0.001 0.00173 0.00173 00000 0.001 0.001 0.001 0.00173 0.00173 00000 0.001 0.001 0.001 0.00173 0.00173 00000 0.001 0.00111 0.00111 0.00173 0.00173 00000	13,67001 1,70952 0,07213 1,72295 0,07213 1,72295 0,04760 1,7226 0,47760 1,7226 0,47760 1,7226 0,47760 1,2726 0,47760 1,4961 33,14960 33,14960 0,4776 0,5754 33,14960 33,14960 0,00 0,14307 0,00 0,0127 11,9976 1,4961 0,01437 0,6157 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 11,9976 1,49739 3,0551 1,49739 3,0551 1,49739 3,05731 2,27678		0.0 . 0.0 . 0.0 . 23.98384 0.0 . 33.14963 33.14963 0.67336 0.67336 0.67336 3.67652 3.678103 5.98103 10.14162 11.2314117 11.2314117 11.2314117	
0.0000 0.07321 0.07321 0.07324 0.07324 00000 0.04718 0.04718 0.04718 0.04724 00000 0.04718 0.04718 0.04718 0.04724 00000 0.04718 0.04718 0.04718 0.04724 00000 0.04718 0.04718 0.04724 0.04724 00000 0.04718 0.04718 0.04717 0.04772 00000 0.04718 0.04718 0.04717 0.04772 00000 0.04718 0.04718 0.04717 0.04772 00000 0.04718 0.04718 0.04717 0.04772 00000 0.04718 0.04718 0.04717 0.04772 00000 0.04718 0.04718 0.04717 0.04717 00000 0.04718 0.04718 0.04717 0.04717 00000 0.04718 0.04718 0.04718 0.04717 00000 0.04718 0.04718 0.04718 0.04717 00000 0.04718 <td>$\begin{array}{c ccccccccccccccccccccccccccccccccccc$</td> <td>0.08213 •• 0.74295 0.04690k • 0.4711 0.07690k • 0.4711 0.07690k • 0.2750 0.01400k • 0.4714 0.01400k • 0.4754 0.0150k • 0.4754 0.010k • 0.4754 0.0127 • 0.4157 0.0127 • 0.4157 0.0127 • 0.4157 0.11.99576 • 0.4157 11.995767 • 0.4157 0.41977 • 0.4157 0.41978 • 0.4157 11.995767 • 0.4157 0.41987 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.41666 0.41986 • <t< td=""><td></td><td>0.0 2.19495 2.19495 0.0 33.14963 33.14963 0.57336 0.94652 0.94652 0.94652 0.94652 3.4117 12.14162 11.214162</td><td></td></t<></td>	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.08213 •• 0.74295 0.04690k • 0.4711 0.07690k • 0.4711 0.07690k • 0.2750 0.01400k • 0.4714 0.01400k • 0.4754 0.0150k • 0.4754 0.010k • 0.4754 0.0127 • 0.4157 0.0127 • 0.4157 0.0127 • 0.4157 0.11.99576 • 0.4157 11.995767 • 0.4157 0.41977 • 0.4157 0.41978 • 0.4157 11.995767 • 0.4157 0.41987 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.4156 0.41986 • 0.41666 0.41986 • <t< td=""><td></td><td>0.0 2.19495 2.19495 0.0 33.14963 33.14963 0.57336 0.94652 0.94652 0.94652 0.94652 3.4117 12.14162 11.214162</td><td></td></t<>		0.0 2.19495 2.19495 0.0 33.14963 33.14963 0.57336 0.94652 0.94652 0.94652 0.94652 3.4117 12.14162 11.214162	
0.0000 0.00000 0.00000 0.00000 0.00000 0.00000 11 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000 0.00000 0.00000 0.00000 0.00000 0.000000 0.00000 0.00000 0.00000 0.000000 0.000000 0.00000 0.000000 0.000000 0.000000 0.000000 0.00000 0.00000 0.00000 0.000000 0.000000 0.00000 0.00000 0.00000 0.00000 0.000000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.00000 0.000000 0.000000 0.00000 0.00000 <	0.0000 0.00000 0.00	0.04960 0.49769 0.49769 0.37321 33.14960 33.14960 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		2.19435 23.94384 0.0 33.14963 35.14963 0.67335 0.67335 0.67335 0.67335 0.67055 3.67065 5.46103 6.48103 12.24117 11.270163	
00000 0.47750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.047750 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.0477720 0.04777200 0.04777200 0.04777200 0.04777200 0.04777200 0.04777200 0.04777200 0.04777200 0.04777200 0.047772000 0.047772000 0.04777200 0.047772000 0.047772000 0.047772000 0.04777200 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.0477720000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000 0.047772000	90000 917321 9 0.47750 0.7770 0.7770 0.7770 20000 9 3.1496 3.1496 3.1496 0.4772 50000 0.7 3.1496 3.1496 0.1477 50000 0.7 0.7475 0.1477 50000 0.7 0.7475 0.1477 50000 0.7 0.7475 0.1477 50000 0.7 0.7475 0.1477 50000 0.7775 0.1475 0.1477 50000 0.7477 0.74776 0.1477 50000 0.7777 0.74776 0.1477 50000 0.7777 0.74776 0.1477 50000 0.7777 0.0777 0.0777 50000 0.7777 0.0777 0.0777 50000 0.7477 0.0777 0.0777 50000 0.7477 0.0777 0.0777 50000 0.7477 0.7777 0.0777 50000 0.7477 0.77777 0.7777	0.49769 a 0.57560 0.37321 ee 0.57541 33.14960 a 14961 33.14960 a 14961 33.14960 a 14961 5.397958 a 0.14307 5.397958 a 0.14307 5.149969 a 0.14378 a 0.451 a 0.1251 5.37678 a 0.0127 a 0.451 a 0.0127 a 0.451 a 0.0121 a 0		23.98384 0.0 33.14963 0.67335 0.67335 0.67335 0.67335 0.67052 3.67065 3.67065 3.67065 3.46103 112.34117 112.34117 112.34117	
20000 6.0 0.037321 0.037321 0.047941 15 33.14963 33.14963 31.14963 31.14961 20000 0.051958 0.051958 0.041972 0.01972 20000 0.051958 0.051958 0.01972 0.01177 20000 0.051958 0.051958 0.01177 0.01177 20000 0.011412 0.02768 0.01177 0.01277 20000 0.011412 0.027919 0.01177 0.01277 20000 0.011412 0.027919 0.01721 0.01277 20000 0.011412 0.02711 0.02711 0.01277 20000 0.011412 0.02711 0.02711 0.02711 20000 0.071127 0.02711 0.02711 0.02711 20000 0.071127 0.02711 0.02711 0.02711 20000 0.071127 0.02712 0.02712 0.02711 20000 0.07127 0.02712	20000 0.017321 0.017321 0.017321 0.017321 0.017321 33.14963 33.14963 33.14963 33.14963 33.14963 31.14961 31.14961 30000 0.07336 0.07336 0.07336 0.07452 0.01737 20000 0.07336 0.07336 0.07336 0.07452 0.017376 20000 0.07336 0.07336 0.077376 0.077776 0.017776 20000 0.07727 0.07727 0.077776 0.077776 0.007776 20000 0.077767 0.077776 0.077776 0.077776 0.0077776 20000 0.077776 0.077776 0.077776 0.007776 0.077776 20000 0.07776 0.07776 0.07776 0.07776 0.077776 20000 0.07776 0.07776 0.07776 0.07776 0.07776 20000 0.07776 0.07776 0.07776 0.07776 0.07776 20000 0.07776 0.07776 0.07776 0.07776 0.07776	0.37321 ************************************		0.0 33.14963 0.51958 0.67336 0.67336 0.67336 0.67336 3.67805 5.47005 5.47005 5.34117 11.234117 11.234117 11.270163	
L3 33.14963 33.14963 33.14963 33.14963 31.1061 5000 0.01 0.01 0.01 0.01 0.0172 5000 0.0136 0.01 0.0136 0.0172 0.0177 9000 0.0136 0.0136 0.010 0.0172 0.0177 9000 0.0136 0.0136 0.010 0.0172 0.0177 9000 0.0136 0.0136 0.0137 0.0171 0.0177 9000 0.01316 0.0136 0.0111 0.0117 0.0171 9000 0.01117 0.0121 0.0111 0.0111 0.0111 9000 0.01111 0.0111 0.0111 0.0111 0.0111 9000 0.01111 0.0111 0.0111 0.0111 0.0111 9000 0.0111 0.0111 0.0111 0.0111 0.0111 9000 0.0111 0.0111 0.0111 0.0111 0.0111 9000 0.0111 0.0111 0.0111 0.0111 0.0111 9000 0.0111 0.0111 0.0111 0.0111 0.0111 9000 0.0111 0.0111 0.0111 0.0111 0.0111 9000 0.0111 <	LS 33.14063 34.14330 34.1130	33.14960 33.14960 0.0 0.0 0.0 0.0 0.0 0.14300 0.14300 0.1430 0.143000 0.143000 0.143000 0.143000 0.1430000 0.14300000000000000000000000000000000000	m	33.14963 33.14963 0.0 0.67336 0.94652 0.94652 0.94652 1.014162 112.14162 112.14163	
30000	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	0.0 0.26465 • 0.61572 4.97926 • 0.61572 5.33958 • • • 0.6127 5.33958 • • • • 0.6127 5.33958 • • • • • • • • • • • • • • • • • • •		0.51958 0.0 0.67336 0.94652 0.94652 0.94652 0.94655 6.48103 10.14162 11.234117 11.234117	
20000 0.01948 0.01948 0.01948 0.01948 20000 0.01336 0.01948 0.01948 0.01172 20000 0.01336 0.01948 0.01948 0.01172 20000 0.01948 0.01948 0.01948 0.01172 20000 0.01948 0.01948 0.01172 20000 0.01948 0.01948 0.01174 20000 0.01117 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01171 0.01174 0.01174 20000 0.01176 0.01176 0.01176 20000 0.01176 0.01176 0.01176 20000 0.01176 0.01176 0.01176 20000 0.01176 0.01176 0.01176 20000 0.01176 0.010176 0.01176 2000	50000 ••• 0.51938 ••• 0.51938 ••• 0.51938 90000 ••• 0.51336 ••• 0.51936 ••• 0.51936 90000 ••• 0.51336 ••• 0.51336 ••• 0.51336 90000 ••• 0.51336 ••• 0.51336 ••• 0.51336 90000 ••• 0.51336 ••• 0.57336 ••• 0.51316 90000 ••• 0.51416 ••• 0.57519 ••• 0.57119 90000 ••• 0.51411 ••• 0.52169 ••• 0.51719 90000 ••• 11.54111 ••• 0.52169 ••• 0.55111 90000 ••• 11.54111 ••• 0.52169 ••• 0.55171 90000 ••• 11.54111 ••• 0.52169 ••• 0.55171 90000 ••• 11.57111 ••• 0.52169 ••• 0.55171 90000 ••• 11.2706 •• 0.52169 ••• 0.55171 90000 •• 1.27066 • 1.27993 ••• 0.57129 90000 •• 1.27993 •• 0.57930 0.57129	0.26465 • 0.61572 4.97926 ••• 7.00127 5.33958 •••• 7.00127 5.33958 ••••• 7.00127 5.33958 ••••• 7.00127 5.33958 ••••• 7.0703 14.43783 14.63783 3.06251 •••• 2.7678		0.51958 0.6735 0.67335 0.94652 3.47065 3.47065 1.0.14162 10.14162 11.70163	
20000 4 0.47336 4 <th< td=""><td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td><td>4,97926 *** 7,00127 5,33958 ****** 7,97033 1,95767 ***********************************</td><td>**************************************</td><td>0,67336 0,94652 3,67065 3,648103 6,48103 10,14162 112,34117 112,70164</td><td></td></th<>	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	4,97926 *** 7,00127 5,33958 ****** 7,97033 1,95767 ***********************************	**************************************	0,67336 0,94652 3,67065 3,648103 6,48103 10,14162 112,34117 112,70164	
0000 0.4462 0.4462 4.4679 0000 0.4462 0.4462 4.4679 0000 0.4462 0.4662 0000 0.4462 0.4662 0000 0.4462 0.4662 0000 0.4462 0.4662 0000 0.4462 0.4661 0000 0.4462 0.4661 0000 0.4462 0.4661 0000 0.4462 0.4613 0000 0.4462 0.4613 0000 0.4461 0.4613 0000 0.4461 0.4611 0000 0.4461 0.4611 0000 0.4461 0.4611 0000 0.4461 0.4611 0000 0.4461 0.4611 0000 0.4461 0.4611 0000 0.4461 0.4611 0000 0.4461 0.46112 0000 0.4461 0.46112 0000 0.4461 0.46112 0000 0.4461 0.46112 0000 0.4461 0.46112 0000 0.44612 0.46112 0000 0.44612 0.4612 0000 0.44612 0.46112 0000 <td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td> <td>5, 33958 ************************************</td> <td></td> <td>0,94652 3,64652 3,64652 6,94655 6,9465 12,94117 11,70163</td> <td>*****</td>	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	5, 33958 ************************************		0,94652 3,64652 3,64652 6,94655 6,9465 12,94117 11,70163	*****
0000 0000 0000 000000 0000	0000 36.706 36.706 44.3706 44.3706 0000 64.8103 64.8103 44.9706 4.0571 0000 64.8103 64.8103 54.706 2.7777 0000 64.8117 50.671 5.0751 2.7777 0000 64.8117 6.9117 0.05117 2.77772 0000 64.9176 0.051171 0.051171 2.77772 0000 64.9177 0.02109 0.051171 0.051171 0000 64.91779 0.02109 0.051171 0.051171 0000 64.91779 0.021097 0.051177 0.051179 0000 64.91779 0.0591477 0.051177 0.051779 0000 64.91779 0.0591477 0.0591477 0.051779 0000 69.91779 0.0591477 0.051779 0.051779 0000 69.912677 0.059167 0.070179 0.070179 0000 69.912779 0.059167 0.059167 0.070179 0000 0.0000 0.00000 0.000000 0.000000 0000 0.00000 0.000000 0.000000 00000 0.000000 0.0000000 0.0000000 00000 0.000000 0.00000000 0.000000000 00000 $0.00000000000000000000000000000000000$	11.95767 accessessessessessesses 14.43795 a 14.99689 annessessessessesses 14.58814 6.87838 sessessesses 3.06251 sess 3.06251 sess		3. 67065 6. 48103 6. 48103 10. 14162 12. 34117 11. 70168	**************************************
OCCO Contraction Contraction <thcontraction< th=""> <thco< td=""><td>000<th< td=""><td>a 14.99699 2240000000000000000000000000000000000</td><td>49444449449 198874944 4849</td><td>6, 48103 10, 14162 12, 34117 11, 70163</td><td>*******</td></th<></td></thco<></thcontraction<>	000 <th< td=""><td>a 14.99699 2240000000000000000000000000000000000</td><td>49444449449 198874944 4849</td><td>6, 48103 10, 14162 12, 34117 11, 70163</td><td>*******</td></th<>	a 14.99699 2240000000000000000000000000000000000	49444449449 198874944 4849	6, 48103 10, 14162 12, 34117 11, 70163	*******
3000 ************************************	3000 30673 6.4783 $4.46.517$ 0.6671 0.6471 5000 1.54171 1.54171 0.78621 0.78621 0.78621 20000 1.54171 0.78621 0.78621 0.7821 20000 1.54171 0.78621 0.78621 0.7821 20000 1.54172 0.78621 0.78621 0.7821 20000 1.54172 0.78651 0.7821 0.7821 20000 1.27806 1.27879 0.78152 0.674152 20000 0.78661 1.27879 0.78152 0.781652 20000 0.78661 1.27879 0.78152 0.781652 20000 0.78666 1.27897 0.78152 0.781652 20000 0.78666 0.78152 0.78152 0.78172 20000 0.78666 0.78162 0.78152 0.78172 20000 0.78667 0.78162 0.78162 0.78172 20000 0.88122 0.78162 0.78162 0.78172 20000 0.88102 0.78162 0.78162 0.78162 20000 0.88102 0.98103 0.91061 0.78162 20000 0.88102 0.98103 0.91061 0.78105 20000 0.88102 0.91061 0.79105 0.79105 20000 0.88102 0.91061 0.91061 0.79105 20000 0.88102 0.91061 0.91061 0.79005 20000 0.88102 0.91061 0.91061		498677968 48605 89	10.14162 12.34117 11.70163	*****
60000 ************************************	60000 1.234117 1.06251 0.06251 0.076241 2.27678 90000 1.54171 1.54171 1.54171 1.54172 0.78644 0.77721 20000 1.54171 1.54172 0.78644 0.78644 0.77721 50000 1.57179 0.78644 0.78644 0.65171 50000 1.225066 1.227606 1.1748 20000 0.79866 1.27877 0.94152 20000 0.79866 1.27877 0.94152 20000 0.79866 1.27877 0.94152 20000 0.79866 1.27877 0.94152 20000 0.94152 0.94152 0.97799 20000 0.79866 0.94152 0.94152 20000 0.79867 0.94152 0.97799 20000 0.79867 0.991671 0.97799 20000 0.991051 0.991051 0.97799 20000 0.991051 0.991051 0.97799 20000 0.991051 0.991051 0.97799 20000 0.991051 0.991051 0.97799 20000 0.991051 0.991051 0.97799 20000 0.991051 0.991051 0.991051 20000 0.991051 0.991051 0.991051 20000 0.991051 0.991051 0.991051 20000 0.991051 0.991051 0.991051 20000 0.991051 0.991051 0.991051 20000 0.991051 0.991051 0.901072 20000	3.06251 #### 2.07678	••••	12, 34117	
90000 ••• 0,96644 •• 0,65171 20000 •• 48,61729 •• 0,65171 20000 •• 48,61729 •• 0,65171 50000 •• 0,5171 •• 0,65171 50000 •• 1,54171 •• 0,65171 50000 •• 1,22606 • 1,1746 50000 •• 0,59152 • 1,1746 20000 •• 0,59153 •• 0,65171 20000 •• 0,59137 •• 0,65171 20000 •• 1,27137 •• 0,65177 3,57939 •• 7,2333 ••• 2,50075 90000 •• 1,011657 •• 0,65177 90000 •• 1,01167 ••• 2,50075 90000 •• 1,01167 ••• 0,57799 90000 ••• 1,01057 ••• 0,57795 90000 ••• 1,54171 ••• 0,59107 90000 ••• 1,56543 ••• 0,5776 90000 ••• 1,56543 ••• 1,55772 90000 •• 1,54171 •• 0,5	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.0000 0.0000 0.0000 0.0000 1.0000 1.0000 0.0000 0.0000 0.0000 0.0000 1.0000 1.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000 0.00000 0.00000 0.0000 0.0000 0.0000 0.0000 0.00000 0.00000 0.0000 </td <td></td> <td>**</td> <td>11. 70163</td> <td>********</td>		**	11. 70163	********
20000 ••• 1.54171 • 0.65171 1 • • • • 0.65171 1 • • • • 0.65171 1 • • • • • 1 • • • • • • 1 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • • • • • 0 • • <td>$\begin{array}{cccccccccccccccccccccccccccccccccccc$</td> <td>0° 30544 TE</td> <td></td> <td></td> <td>***************</td>	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0° 30544 TE			***************
Isolation 49.51720 49.51721 49.51730 50000	43 43 -51729 43 -51721 43 -51721 43 -51721 50000 0 0 94152 0 10 20000 0 0 97917 0 0 20000 0 0 59799 0 0 20000 0 0 59799 0 0 20000 0 0 59799 0 0 20000 0 0 77313 0 0 20000 0 0 77599 0 0 20000 0 0 77599 0 0 20000 0 0 10 10079 0 20000 0 0 100709 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0 0 0 0 0 10000 0	0.22189 • 0.65171	•	1. 54171	
50000 • 1.27506 • 0.94152 • 0.1174 50000 • 1.27976 • 1.2797 • 0.37431 20000 • 3.57996 • 1.27506 • 0.37431 20000 • 3.57996 • 1.27509 • 2.59057 20000 • 2.99247 • 2.59369 • 2.59057 20000 • 2.99247 • 2.59369 • 0.91079 20000 • 4.29569 • 2.59390 • 0.77569 20000 • 10.1462 • 20.1055 • 0.27095 20000 • 10.1462 • 3.11056 • • 2.740327 20000 • 1.0564 • 1.0564 • 0.5712 • 0.7716 20000 • 1.54171 • 0.59510 • 0.5772 0.7062 0.7706 • 0.7062 0.7062 0.7062 0.7062 0.7062 0.7062 0.7062 0.7062 </td <td>50000 • 0.94152 • 1.1174 50000 • 0.94152 • 0.94152 • 90000 • 0.7986 • 0.94152 • 0.94152 90000 • 0.7986 • 1.22606 • 0.94152 • 0.94153 90000 • 0.7986 • 1.2769 • 2.58037 2.58037 90000 • 0.99171 • 0.91769 • 2.40327 90000 • 4.22963 • 3.59109 • 2.40327 90000 • 4.23663 • 10.11053 • 2.40327 90000 • 10.11053 • 3.11053 • 9.1579 90000 • 1.54171 • 0.59510 • 1.5779 90000 • 1.54171 • 0.59910 • 1.5779 90000 • 1.54171 • 0.59910 • 1.5779 90000 • 1.54171 • 0.59510 •</td> <td>48° 51721 48° 51730</td> <td></td> <td>48.41739</td> <td>,</td>	50000 • 0.94152 • 1.1174 50000 • 0.94152 • 0.94152 • 90000 • 0.7986 • 0.94152 • 0.94152 90000 • 0.7986 • 1.22606 • 0.94152 • 0.94153 90000 • 0.7986 • 1.2769 • 2.58037 2.58037 90000 • 0.99171 • 0.91769 • 2.40327 90000 • 4.22963 • 3.59109 • 2.40327 90000 • 4.23663 • 10.11053 • 2.40327 90000 • 10.11053 • 3.11053 • 9.1579 90000 • 1.54171 • 0.59510 • 1.5779 90000 • 1.54171 • 0.59910 • 1.5779 90000 • 1.54171 • 0.59910 • 1.5779 90000 • 1.54171 • 0.59510 •	48° 51721 48° 51730		48.41739	,
50000 0.7112 0.7112 0.7117 20000 0.77986 0.7713 0.7117 20000 3.5799 0.7786 4.27976 3.5799 3.5799 1.27877 4.29568 3.5799 1.27877 7.2733 4.40377 3.5799 1.27879 1.27877 4.40377 3.5799 1.27879 1.27897 4.40377 3.59000 1.27879 1.27893 4.40377 3.59000 1.27893 1.27893 4.40377 3.0000 1.27817 1.27893 4.20376 3.0000 1.27817 1.26463 1.164653 3.0000 1.28417 1.38412 1.38412 3.0000 1.284171 0.059510 1.184653 3.0000 1.38412 1.38412 1.38412 3.0000 1.38412 1.38412 1.38412 3.0000 1.38412 1.38412 3.19566 3.0000 1.38412 1.38412 1.38412 1.38412 1.38412 1.38412 1.35793 2.0000 1.38412 1.38412 1.35793 2.0000 1.38412 1.38412 1.35793 1.5 1.38412 1.38412 1.35712	50000 1,22006 1,22006 1,2700 20000 3,57796 1,2713 1,2713 20000 3,57796 5,9347 4,2964 20000 4,29564 1,27169 1,27136 20000 4,29564 1,27169 1,27136 20000 4,29564 1,27169 2,9027 20000 4,29564 1,27169 1,27169 20000 4,29564 1,27169 1,2709 20000 10,1110 1,27169 1,27169 20000 10,11105 1,11054 1,11054 20000 10,11105 1,11054 1,15799 20000 10,11105 1,11054 1,15799 20000 10,5111 1,36652 1,07072 20000 1,54171 0,059510 1,56712 20000 1,54171 0,059510 1,5712 20000 1,56693 1,66693 1,56663				
20000 3.57799 4.41079 2.56959 20000 4.29569 4.41079 2.59373 20000 4.29569 4.41079 2.59373 20000 4.29569 4.41079 2.59379 20000 4.29569 4.41079 2.59379 20000 4.429569 4.41079 2.59379 20000 4.429569 4.41079 2.599165 20000 4.429563 4.41079 2.599165 20000 4.4102 4.41079 4.403717 20000 4.4102 4.41076 4.410765 20000 4.41107 4.41107 4.410765 20000 4.41107 4.411076 4.411076 20000 4.41107 4.411076 4.411076 20000 4.41171 4.411076 4.411076 20000 1.54171 4.10566 4.10566 20000 1.54412 4.10566 4.107082 20000 1.554171 4.10566 4.10566 20000 1.566693 1.566695 1.55712 1.5 1.66679 4.10566 4.10566 1.6 4.10566 4.10566 4.10566 1.6 4.10566 4.10566 4.10566 <td>20000 3.93477 4. 2.3605 90000 4. 2.90247 4. 2.3605 90000 4. 2.90247 4. 2.3605 90000 4. 2.90247 4. 2.04037 90000 4. 2.90247 4. 20.40377 90000 4. 2.90247 4. 2.40377 90000 4. 2.90247 4. 2.40377 90000 4. 2.90247 4. 2.40377 90000 4. 2.90590 4. 2.90590 90000 4. 10.1162 4. 2.91051 90000 4. 10.1162 4. 3. 90000 4. 10.1162 4. 3. 90000 4. 10.54171 4. 0.59510 90000 4. 1.54171 4. 0.59510 1. 5.4121 4. 0.559510 4. 1. 5.41657 4. 5.5112 1. 1. 5.512 4. 1. 1. 5.56652 4. 1. 5.5112 4. 5.712 1. 5.56653 4. 5. 1. <td< td=""><td></td><td>• •</td><td>1.22606</td><td>•</td></td<></td>	20000 3.93477 4. 2.3605 90000 4. 2.90247 4. 2.3605 90000 4. 2.90247 4. 2.3605 90000 4. 2.90247 4. 2.04037 90000 4. 2.90247 4. 20.40377 90000 4. 2.90247 4. 2.40377 90000 4. 2.90247 4. 2.40377 90000 4. 2.90247 4. 2.40377 90000 4. 2.90590 4. 2.90590 90000 4. 10.1162 4. 2.91051 90000 4. 10.1162 4. 3. 90000 4. 10.1162 4. 3. 90000 4. 10.54171 4. 0.59510 90000 4. 1.54171 4. 0.59510 1. 5.4121 4. 0.559510 4. 1. 5.41657 4. 5.5112 1. 1. 5.512 4. 1. 1. 5.56652 4. 1. 5.5112 4. 5.712 1. 5.56653 4. 5. 1. <td< td=""><td></td><td>• •</td><td>1.22606</td><td>•</td></td<>		• •	1.22606	•
0000 0 2,99247 0 7,7333 0 4,01079 1 0 0 0 0 10,000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0000 00000 0000 0000 0000	5-93437 ** 2-38055		3. 56700	
0000 000 00000 0000 0000 <th< td=""><td>0000 00 0 00 0 00 <th0< th=""> 0 0 0 <th< td=""><td>7.23333 ****</td><td>****</td><td>2.40247</td><td>::</td></th<></th0<></td></th<>	0000 00 0 00 0 00 0 <th0< th=""> 0 0 0 <th< td=""><td>7.23333 ****</td><td>****</td><td>2.40247</td><td>::</td></th<></th0<>	7.23333 ****	****	2.40247	::
0 0 <th0< th=""> <th0< th=""> <th0< th=""> <th0< th=""></th0<></th0<></th0<></th0<>	3 6000 400000 400000 400000 400000 400000 400000 400000 400000 400000 400000 400000 400000 400000 400000 400000 4000000 400000 400000 4	20. 77269 s'seessessessesses 27. 40327	**********	4.29568	
30000 40000 <td< td=""><td>3000 ***** 10,14162 ***** 6,91051 ***** 9,52709 2000 ******** 14,53602 ** 3,11058 *** 3,15789 9000 **********************************</td><td>- 33.62590 ####################################</td><td>**************</td><td>6.98103</td><td>\$\$\$\$</td></td<>	3000 ***** 10,14162 ***** 6,91051 ***** 9,52709 2000 ******** 14,53602 ** 3,11058 *** 3,15789 9000 **********************************	- 33.62590 ####################################	**************	6.98103	\$\$\$\$
0000 0000 0000 0000 0.1056 0.0509 00000 00000 0.59510 0 0.59510 0 20000 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0 1 0 0.59510 0 0	6000 ************************************	6.91051 xeeeee 9. 2709	****	10, 141 62	*****
90000 •••••••••••••••••••••••••••••••••	90000 •••••••••••••••••••••••••••••••••	3e11058 eee 3e15789	:	-14 53602	********
20000 • 1.54171 • 0.59510 • 1.52712 LS Al-66693 Al-66693 Al-66695 Al-6665 Al-66666 Al-66666 Al-66666 Al-66666 Al-66666 Al-66666 Al-666666 Al-66666 Al-66666 Al-666666 Al-6666666666	.20000 • 1.54171 • 0.59510 • 1.52712 LS 91.66693 81.66695 81.66695 81.66695 81.66695	1. 36412 . 1. 070R2	•	35.68552	***************
LS A1.66693 A1.66693 A1.66695 A1.66695 A1.66695 A1.66645 A1.666495 A1.666495 A1.666495 A1.666445 A1.66645 A1.66655 A1.66655 A1.66645 A1.66655 A1.66655 A1.66655 A1.66655 A1.66655 A1.666555 A1.666555 A1.666555 A1.6665555 A1.6665555555555555555555555555555555555	ILS A1.66693 A1.66693 A1.66693 A1.66693	0•59510 •• 1•57712	•	1. 54171	•
REFICAL MO INTERACTION TOTAL = 55.20851		Al. 66695 Al. 66695		91.66693	
REFICAL MO INTERACTION TOTAL = 55°20851					
	RETICAL NO INTERACTION TOTAL = 55.20851				

-35-

APPENDIX 3

No Interaction Beam Intensity

We derive here a formula for the beam intensity at points close to the skimmer.

Let D be the nozzle skimmer distance, L be the skimmer-observation point distance and b be the skimmer radius. Consider a particle in the 'skimmer orifice plane at position $(r \cos \theta, r \sin \theta)$ whose velocity has a probability density function proportional to

$$\exp[(u-1)^{2} + (v-r \cos \theta/D)^{2} + (w-r \sin \theta/D)^{2}]/c^{2}$$

That is, the mean velocity vector points in the direction

$$(1, \frac{r \cos \theta}{D}, \frac{r \sin \theta}{D});$$

The impact position of the particle on the plane normal to the axis distance L downstream of the skimmer then has probability distribution

$$\frac{1}{L^2 d^2} e^{-\frac{1}{Lc^2} \left[\left(x - \alpha r \cdot \cos \theta \right)^2 + \left(y - \alpha r \cos \theta \right)^2 \right]}$$

where

$$\alpha = \frac{L+D}{D}$$

If the flux through the orifice is \emptyset particles per unit area then the flux through the point x,y is

$$\phi_{\rm L}(\mathbf{x},\mathbf{y}) = \phi \int_0^{\mathbf{b}} r dr \int_0^{2\pi} d\theta \frac{1}{L^2 c^2 \pi} e^{-(\frac{1}{Lc})^2 \left[\left(\mathbf{x} - dr \cos \theta \right)^2 + \left(\mathbf{y} - dr \sin \theta \right)^2 \right]}$$

This integral is messy in general, but if we ask only for the centreline flux (x = y = o) we obtain

which one can easily evaluate to obtain

$$(\frac{D}{T+D})^2(1-e^{-[\frac{D}{C}(\frac{1}{L}+\frac{1}{D})]^2}).$$

36

A3-1