



MICROCOPY RESOLUTION TEST CHART
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SECURITY :

DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED		1b. RESTRICTIVE MARKINGS	
2a. SECURITY CLASSIFICATION AUTHORITY		3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited.	
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE			
4. PERFORMING ORGANIZATION REPORT NUMBER(S)		5. MONITORING ORGANIZATION REPORT NUMBER(S) AFOSR-TR- 84-0450	
6a. NAME OF PERFORMING ORGANIZATION Research Institute of Colorado	6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION Air Force Office of Scientific Research	
6c. ADDRESS (City, State and ZIP Code) Drake Creekside Two, Suite 200, 2629 Redwing, Fort Collins CO 80526		7b. ADDRESS (City, State and ZIP Code) Directorate of Mathematical & Information Sciences, Bolling AFB DC 20332	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION AFOSR	8b. OFFICE SYMBOL (If applicable) NM	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER AFOSR-ISSA-83-00027	
8c. ADDRESS (City, State and ZIP Code) Bolling AFB DC 20332		10. SOURCE OF FUNDING NOS.	
		PROGRAM ELEMENT NO. 61102F	PROJECT NO. 1304
		TASK NO. A3	WORK UNIT NO.
11. TITLE (Include Security Classification) CONDUCT OF THE INTERNATIONAL MULTIGRID CONFERENCE			
12. PERSONAL AUTHOR(S) Stephen McCormick			
13a. TYPE OF REPORT Final	13b. TIME COVERED FROM 1/1/83 TO 30/9/83	14. DATE OF REPORT (Yr., Mo., Day) FEB 84	15. PAGE COUNT 51
16. SUPPLEMENTARY NOTATION			
17. COSATI CODES		18. SUBJECT TERMS (Continue on reverse if necessary; and identify by block number)	
FIELD	GROUP	SUB GR	
19. ABSTRACT (Continue on reverse if necessary; and identify by block number) The 1983 International Multigrid Conference was held at Colorado's Copper Mountain Ski Resort, April 5-8. It was organized jointly by the Institute for Computational Studies at Colorado State University, U.S.A., and the Gesellschaft fur Mathematik und Datenverarbeitung Bonn, F.R. Germany, and was sponsored by the Air Force Office of Sponsored Research and National Aeronautics and Space Administration Headquarters. The conference was attended by 80 scientists, divided by institution almost equally into private industry, research laboratories, and academia. Fifteen attendees came from countries other than the U.S.A. In addition to the fruitful discussions, the most significant factor of the conference was of course the lectures. The lecturers include most of the leaders in the field of multigrid research. The program offered a nice integrated blend of theory, numerical studies, basic research, and applications. Some of the new areas of research that have surfaced since the Kohn-Horn conference include: the "algebraic multigrid approach; multigrid treatment of Euler equations for inviscid fluid flow problems; (CONTINUED)			
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT <input type="checkbox"/> DTIC USERS <input type="checkbox"/>		21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED	
22a. NAME OF RESPONSIBLE INDIVIDUAL CPT John P. Thomas, Jr.		22b. TELEPHONE NUMBER (Include Area Code) (202) 767- 5026	22c. OFFICE SYMBOL NM

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ITEM #19, ABSTRACT, CONTINUED: 3-D problems; and the application of MG methods on vector and parallel computers. New results have also been achieved in the following areas: software for standard elliptic problems (finite element and finite differences); bifurcation problems; grid manipulation processes; and comparisons with other techniques. Questionnaires were sent to all participants after the conference, with about a third responding. It is encouraging to note that there was virtually unanimous enthusiasm about the conference, facilities, organization, and environment. There was especially positive response concerning the lecture content and format. It is significant that all those who responded to question 9 concerning another meeting indicated that they would like one held by 1984 or 1985. Attached to this report are the completed questionnaires and a list of the speakers and attendees.

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FINAL REPORT

for

NASA Contract No. NASW-3773

"Conduct of the International Multigrid Conference"

Dr. Stephen McCormick

Principal Investigator

Approved for public release;
distribution unlimited.



Research Institute of Colorado

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AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (AFSC)
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MATTHEW J. W.
Chief, Technical Information Division

The 1983 International Multigrid Conference was held at Colorado's Copper Mountain Ski Resort, April 5-8. It was organized jointly by the Institute for Computational Studies at Colorado State University, U.S.A., and the Gesellschaft für Mathematik und Datenverarbeitung Bonn, F.R. Germany, and was sponsored by the Air Force Office of Sponsored Research and National Aeronautics and Space Administration Headquarters. The conference was attended by 80 scientists, divided by institution almost equally into private industry, research laboratories, and academia. Fifteen attendees came from countries other than U.S.A.

In addition to the fruitful discussions, the most significant factor of the conference was of course the lectures. The lecturers include most of the leaders in the field of multigrid research. The program offered a nice integrated blend of theory, numerical studies, basic research, and applications. Some of the new areas of research that have surfaced since the Koln-Perz conference include:

- the "algebraic" multigrid approach;
- multigrid treatment of Euler equations for inviscid fluid flow problems;
- 3D-Problems; and
- the application of MG methods on vector and parallel computers.

New results have also been achieved in the following areas:

- software for standard elliptic problems (finite element and finite differences);
- bifurcation problems;
- grid manipulation processes; and
- comparisons with other techniques.

Questionnaires were sent to all participants after the conference, with about a third responding. It is encouraging to note that there was virtually unanimous enthusiasm about the conference, facilities, organization, and environment. There was especially positive response concerning the lecture content and format. It is significant that all those who responded to question 9 concerning another meeting indicated that they would like one held by 1984 or 1985.

Attached to this report are the completed questionnaires and a list of the speakers and attendees.

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INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

REC.
MAY 1983

INSTITUTE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Very important and very beneficial. I like conferences where I do not need an automobile, where the participants are relatively isolated from the outside world, and where some physical activity is possible.

2. From which lectures or types of lectures did you benefit most?

Brandt's survey lecture (not the paper), Stuben's paper on Algebraic Multigrid, Thames' paper on mesh generation, and papers by Caughey, Jameson, and Jespersen.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

I like a tight order of the paper presentations, which corresponds to the published schedule.

There was a problem starting the sessions at 8:00am because the restaurant did not open until 7:30am and service was slow.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

1. Algebraic Multigrid concepts. 2. Confirmation of my suspicions, dating back to 1977, that MG will have trouble with high Reynolds number problems unless upwind differencing is used on coarse grids. (MG makes the cell Reynolds number problem worse.) 3. Awareness of the wide variety of cycling schemes used. (I still think Cycle C is best.) 4. Difficulty of proper smoothing algorithm for complex prob'

5. How did the conference contribute to your own professional activities?

Definitely helped, notably in the areas of three-dimensional grid generation, fluid dynamics, and electric field calculations.

INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Developer of algorithms and codes for solving 2D and 3D problems of fluid dynamics and electrostatics, especially in boundary-fitted non-orthogonal coordinates. Benefitted from contacts with both other "practitioners" and with the intelligible theoretical people.

7. What were the conference's good and bad points?

*Good: location, scheduling, quality of the best speakers, lodging
Bad: The written papers, abstracts, and conference schedule were poorly organized. Even a conference with an informal atmosphere needs a firm schedule, sent at least one week ahead of the conference to the attendees,**

8. In your opinion, was the conference a success or failure?

Unqualified success; one of the best conferences I have attended in years.

9. Would you like to see another MG Conference (who, when and where)?

Yes; same community + any other contributors who know what they are doing; one or one and 1/2 year intervals. I like Colorado, but the international flavor and cooperation would be enhanced by moving it around. How about a conference nominally every 1 1/2 years, with late-winter/spring meetings in Colorado alternating with a late-summer/fall meeting in Europe (Germany, Holland, Britain) or Israel?

10. Additional comments:

** and a booklet of 1- or 2-page abstracts bound together in the order of presentation. With more effort and organizational money, one can provide the actual papers in a bound volume as the AIAA does, but this requires more lead time and cuts out the most recent results. However, the booklet of abstracts is not difficult and helps immensely in planning and taking notes, and should be absolutely required from the authors. As an option, in addition to the bound abstracts, the authors can also provide drafts of the full papers, as done at this conference, but these must be STAPLED! The situation of having a lap full of 20 papers, unstapled, not in any ***

Name Optional

P. J. Roache
Patrick J. Roache

***order (either alphabetical on authors names, or in order of presentation), and contending with changes in the order of papers from the schedule, all the while trying to take notes, detracted from the experience. I know other conferences have the same problems, but it is unnecessary.*

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

The choice of a recreational resort contributed to a relaxed environment which I think is important to a good conference.

2. From which lectures or types of lectures did you benefit most?

Those involving multigrid applications to parabolic & hyperbolic type probs.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

I think the program was well-conceived & spanned the technology (theoretical to applied). Scheduling did not allow too much time for in depth discussion.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

*I learned that we have a long way to go to make multigrid work in complex reservoir simulation probs.
- Applications to reservoir simulation.*

5. How did the conference contribute to your own professional activities?

Was enlightening with regard to giving an update as to where we stand. We are not actively pursuing multigrid methods, but rather are monitoring progress in this area.

INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Researcher with applications orientation.

7. What were the conference's good and bad points?

*(Bad) Too many speakers scheduled each day.
(Good) Good international representation; Small group enhancing informality & communication; Areas of technology well represented.*

8. In your opinion, was the conference a success or failure?

Success.

9. Would you like to see another MG Conference (who, when and where)?

*Yes - Possibly biannually;
Spring is a good time assuming the season will not be bypassed as in Colo. this yr. I like the notion of a Colorado mtn resort @ the AM-evening sessions w/after lunch free.*

10. Additional comments:

This format has been used to good advantage at other conferences I've attended (Gordon Research Conf., Pembroke Conf., SPE forums, etc).

Ed Thomas

Name Optional

SECRET

MAY 1983

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

ENVIRONMENT WAS INFORMAL - LED TO A
RELAXED ATMOSPHERE - GOOD FOR EXCHANGING
IDEAS

2. From which lectures or types of lectures did you benefit most?

- LECTURES PERTAINING TO MY OWN AREA OF
RESEARCH (IE. RESERVOIR SIMULATION) WERE
MOST INTERESTING

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

- WELL ORGANIZED

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

5. How did the conference contribute to your own professional activities?

INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

PRACTITIONER - YES I BENEFITED FROM CONTACT
WITH BASIC RESEARCHERS

7. What were the conference's good and bad points?

- VERY WELL ORGANIZED CONFERENCE
- GREAT SKIING

8. In your opinion, was the conference a success or failure?

- SUCCESS

9. Would you like to see another MG Conference (who, when and where)?

YES I WOULD LIKE TO SEE ANOTHER MG
CONFERENCE

- IN 1-2 YEARS - WESTERN US IS A GOOD
LOCATION FOR ME .

10. Additional comments:



Name Optional

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INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

CONFERENCES
& INSTITUTES

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
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Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Copper Mountain was pleasant and made the conference more enjoyable. Conference room itself was much too crowded.

2. From which lectures or types of lectures did you benefit most?

The lectures on multidimensional flow.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Okay

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

Yes, general understanding of multilevel.

5. How did the conference contribute to your own professional activities?

Plan to use multilevel in the near future, made interesting contacts with other people.

INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Yes, applied researcher with basic researcher.

7. What were the conference's good and bad points?

Bad - crowded room.

Good - most speakers.

8. In your opinion, was the conference a success or failure?

Success!

9. Would you like to see another MG Conference (who, when and where)?

Yes, ~ 1-1/2 years, "nice" geographical location in US.

10. Additional comments:

Greg AsHalle
Name optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

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To: Gloria Jean Thomas, Conference Coordinator
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Colorado State University
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1. What do you think about the environment and how it affected the conference?
Beautiful environment with positive influence on conference.
2. From which lectures or types of lectures did you benefit most?
For me the most beneficial were those dealing with multigrid applied to specific problems.
3. Please comment on the planning of the schedule and program (timings, topics, etc.)
Conference was well-planned; scheduling was unusual (8-12, 5-6³⁰) but worked out well. Programming was well done. Lecture room needed to be bigger.
4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
Main value for me was in learning how other people with similar problems treat them via multigrid. The important areas to me were fluid dynamics applications and non-symmetric problems.
5. How did the conference contribute to your own professional activities?
Keeps me abreast of the latest in multigrid.

INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Applications - practitioner.

I must say the theoreticians and those engaged in solving Laplace's equation didn't have much to offer me.

7. What were the conference's good and bad points?

Good: top people in field, beautiful setting

Bad: small lecture room, a couple of bad talks.

8. In your opinion, was the conference a success or failure?

Success.

9. Would you like to see another MG Conference (who, when and where)?

?

10. Additional comments:

Francis J. ...
Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

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& INSTITUTES

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
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1. What do you think about the environment and how it affected the conference?

Environment was really nice; housing, however, was a little bit expensive; the effect for the conf was, that you always had a bad conscience, either because you didn't ski or because you didn't ski.

2. From which lectures or types of lectures did you benefit most?

The lectures from the engineering practitioners on the 2nd day.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Schedule was in general good, but too closely packed; sessions should start later (3 am); the room was too small.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

I learned a lot from the presentations in fluid mechanics and aerodynamics.

5. How did the conference contribute to your own professional activities?

gave new ideas and problems from the part of 4.

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

basic researcher / contact with practitioners was most stimulating

7. What were the conference's good and bad points?

good: environment

bad: too short a time to adapt to the climate / no library

8. In your opinion, was the conference a success or failure?

success

9. Would you like to see another MG Conference (who, when and where)?

yes / '84 or '85 / next time perhaps Earl Collier

10. Additional comments:

The personal organization of Ben Thomas was extremely wonderful, a lot of thanks

A. Kupin

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

*The environment was very enjoyable and relaxing to me.
I think it had a very positive effect upon the conference in that
our saturation points were increased*

2. From which lectures or types of lectures did you benefit most?

*lectures which dealt with general concepts and ideas, instead of
specific problems*

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

*AMG
spectral multigrid - someone in our group is working on this and
it was interesting to me as well*

5. How did the conference contribute to your own professional activities?

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)
As a basic researcher I benefited most from the talks on concepts since no one really addressed the specific area that I am working on
7. What were the conference's good and bad points?
*Good points - well organized, relaxed atmosphere, afternoon break
Bad points - conference room too crowded*
8. In your opinion, was the conference a success or failure?
9. Would you like to see another MG Conference (who, when and where)?
10. Additional comments:

Paul E. Givellshi

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

It was very nice, the casual atmosphere carried over nicely into the sessions.

2. From which lectures or types of lectures did you benefit most?

I enjoyed the mix of basic and applied papers.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

The schedule, with afternoons free, was very relaxing.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

I carried away a better appreciation for the breadth of fields affected by mult.-grid; also received specific comments relating to my own special area.

5. How did the conference contribute to your own professional activities?

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Basic researcher & teacher.
Yes, the cross-fertilization is essential.

7. What were the conference's good and bad points?

Good: location, quality of speakers
Bad: ?

8. In your opinion, was the conference a success or failure?

A successful bringing together of basic & applied researchers.

9. Would you like to see another MG Conference (who, when and where)?

Yes, but probably no more often than every two or three years.

10. Additional comments:

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

MAY 11 1983

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
It helped create a relaxed atmosphere; not having continual lectures from 8:00 am to 5:00 pm. (as is common in other conferences) helped increase the amount I could learn (i.e., I didn't get burned out).
2. From which lectures or types of lectures did you benefit most?
The lectures given in Session II (Wed. evening)
3. Please comment on the planning of the schedule and program (timings, topics, etc.)
4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
I was very interested to learn about AMG (Algebraic Multigrid) theory and results.
5. How did the conference contribute to your own professional activities?
It helped me to get a better handle on what has been done with multigrid methods and what applications are currently being investigated.

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Graduate student involved in basic research on solving spectral equations using multigrid techniques.

7. What were the conference's good and bad points?

8. In your opinion, was the conference a success or failure?

success

9. Would you like to see another MG Conference (who, when and where)?

10. Additional comments:

- 1) The lecture room was extremely cramped*
- 2) Somehow I managed to get a room directly over a bar in which a live band played each night. Consequently I did not get much of a chance to sleep.*

Scott R. Fulton

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

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CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Excellent

2. From which lectures or types of lectures did you benefit most?

Having the Proceedings Available at the Conference

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Excellent, but Friday morning checkout
Requirement badly affected attendance then

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

Multigrid status
Transonic applications

5. How did the conference contribute to your own professional activities?

Helped in my teaching of seminar

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6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

Question too diffuse

7. What were the conference's good and bad points?

on a chair lift, a
colleague must answer
your questions!

food service, especially
breakfast

8. In your opinion, was the conference a success or failure?

Success

9. Would you like to see another MG Conference (who, when and where)?

Sure, same place, but aren't there
already many?

10. Additional comments:

You did a good job Steve.

K. Gustafson

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

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CONFERENCES
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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

*Excellent environment, stimulated attendance, contributed
to personal exchanges*

2. From which lectures or types of lectures did you benefit most?

Detailed scientific reports & surveys

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Generally well done

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

*yes As an outsider to this specialty I gained
insight into the nature of problems, kinds of activities &
results, and attitudes of principal workers*

5. How did the conference contribute to your own professional activities?

gained insight into an active area of research

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6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

7. What were the conference's good and bad points?

*Few bad points, many good. good selection of speakers
& good location*

8. In your opinion, was the conference a success or failure?

=====

9. Would you like to see another MG Conference (who, when and where)?

yes see 1-2 yrs

10. Additional comments:

*In many ways this was a model ^{for} attractive
scientifically useful meetings*

Name Optional

David W Fox

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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

The meeting room was quite crowded, but otherwise suitable. It was unfortunate that we were left in the dark as to food facilities on the first evening and morning.

2. From which lectures or types of lectures did you benefit most?

I benefit most from the lectures which deal mostly with computer techniques, rather than with the underlying math theories.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Fine.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

It was interesting to see that more people in the session were interested in accuracy than in time and cost of computations.

5. How did the conference contribute to your own professional activities?

I am better able to deal with my customers when I know what their interest are.

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

I am a pre-sales analyst for a computer vendor, CRAY RESEARCH.
I had beneficial contact with several people.

7. What were the conference's good and bad points?

GOOD: lectures, people, skiing.

BAD: food services, condos (instead of singles), incorrect spelling of names on lists.

8. In your opinion, was the conference a success or failure?

Success.

9. Would you like to see another MG Conference (who, when and where)?

Yes.

10. Additional comments:

Please keep me on your mailing list for all conferences that might possibly interest a computer analyst.

Thank you.

GEORGE W. PACKAGE

Name Optional

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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

I did not like the location. The conference facilities were single just OK, but the room rates were fat too high and the cold was not very pleasant either. Obviously, I am a non-skier.

2. From which lectures or types of lectures did you benefit most?

The first session was by far the best. The most valuable lectures sessions were those in dealing with large 3 dimensional problems involving fairly simple PDE's.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

I thought the schedule and program were well done.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

I learned a great deal in the areas mentioned above in no. 2.

5. How did the conference contribute to your own professional activities?

The conference was very valuable in that it increased my confidence in my knowledge of multi-grid and also acquainted me with the current state-of-the-art in multi-grid. I also met some of the major directors of multi-grid like Brandt and McCormick.

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

I am a basic researcher in numerical modeling of atmospheric processes near the surface of the earth. As such, I am a user of multi-grid techniques. I found it very useful to talk to others involved both use and development of multigrid techniques.

7. What were the conference's good and bad points?

My only complaint is on the location. As a Federal employee, my per diem did not even cover the cost. I had to make up the difference with my own funds.

8. In your opinion, was the conference a success or failure?

It was a big success. As ~~we~~ alluded to in no. 6 above it is always beneficial to bring together workers having different backgrounds because it allows for valuable interaction.

9. Would you like to see another MG Conference (who, when and where)?

Yes, very much. I think that one year from now would be a good time. As for the location any place other than a resort area would be fine.

10. Additional comments:

William Thompson
Name Optional

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CONFERENCES
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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Beneficial. "Small town" atmosphere facilitated talking to people.

2. From which lectures or types of lectures did you benefit most?

*Those comparing multigrid with other methods on realistic problems.
I like to see both theoretical work and computational results.*

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

*Very educational. Randy Damba's talk & Ache Brandt's were informative.
The talks of Behie & Forsyth, and Gary McCormick's were particularly
relevant to my work. The work on algebraic multigrid (Brandt, McCormick, Ruge,
and Stalen, Trottenberg) was also good. Toni Janicek's talk was worthwhile.*

5. How did the conference contribute to your own professional activities?

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

basic researcher/practitioner. My work requires both activities.

7. What were the conference's good and bad points?

*Good points: Planned dinner + banquet.
Bad points: No downtime between sessions. Lack of restaurants for early breakfast.*

8. In your opinion, was the conference a success or failure?

success

9. Would you like to see another MG Conference (who, when and where)?

Yes. Should have Arbi Brandt + Randy Bank.

10. Additional comments:

• Very good conference

David P. Young

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

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CONFERENCE
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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

The environment were very suitable for the conference

2. From which lectures or types of lectures did you benefit most?

Lectures that covered some of the theoretical aspects of Multigrid

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Planning and coordination was great.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

The conference was very informative to myself.

The AMG was the area that I ~~found~~ enjoyed the most.

5. How did the conference contribute to your own professional activities?

The AMG course convinced me that we will have a true black box multigrid in the near future.

INTERNATIONAL MULTIGRID CONFERENCE
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CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

basic researcher and lots of activities in
real applications. I believe I learn more

7. What were the conference's good and bad points?
From CSU basic researchers.

bad point: being a little too long
good points: topics covered

8. In your opinion, was the conference a success or failure?

a success

9. Would you like to see another MG Conference (who, when and where)?

Maybe in another year The same
location is fine

10. Additional comments:

Great job once all

M. J. Mandor

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?
SKIING WAS FUN, BUT IT DEFINITELY ~~DETRA~~ CUTS DOWN ON THE ACCOMPLISHMENTS OF THE CONFERENCE. FOR ONE THING IT OCCUPIES A SIGNIFICANT AMOUNT OF TIME.
2. From which lectures or types of lectures did you benefit most?
NOT BEING A MATHEMATICIAN, I GOT MORE OUT OF THE PAPERS WITH AN ENGINEERING APPROACH.
3. Please comment on the planning of the schedule and program (timings, topics, etc.)
SCHEDULE WAS FINE, EXCEPT FOR THE PROBLEM WITH GETTING BREAKFAST (SINCE NOTHING WAS OPEN)
4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?
THE CONFERENCE HAS GIVEN ME IDEAS ON THINGS TO TRY (IF I HAVE TIME). I HAVE GOTTEN A BETTER FEEL FOR WHAT IS POSSIBLE USING MULTIGRID.
5. How did the conference contribute to your own professional activities?
SEE (4.)

INTERNATIONAL MULTIGRID CONFERENCE
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CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

BASIC RESEARCH IN COMPUTATIONAL FLUID MECHANICS
USER OF MULTIGRID TO SPEED COMPUTATIONS.
I HAD BENEFICIAL CONTACT WITH OTHERS.

7. What were the conference's good and bad points?

THE CONFERENCE'S BAD POINT (WITH RESPECT TO ME)
WAS THE VERY MATHEMATICAL (NOTATION, ETC) NATURE
OF THE ~~PAPERS~~ PRESENTATIONS. MANY POOR
PRESENTATIONS (TYPICAL).

8. In your opinion, was the conference a success or failure?

SUCCESS

9. Would you like to see another MG Conference (who, when and where)?

ABOUT EVERY 2 YEARS. NOT MUCH USE TO ME
UNLESS IN THE U.S.

10. Additional comments:

Theodore A. Keyner
Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

GOOD ENVIRONMENT - CONDUCIVE TO INFORMAL DISCUSSION.

2. From which lectures or types of lectures did you benefit most?

1. ALGEBRAIC MULTIGRID
2. APPLICATIONS OF MULTIGRID

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

GOOD

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

YES

SEE 2. ABOVE

5. How did the conference contribute to your own professional activities?

IMPROVED COMMUNICATIONS WITH MATHEMATICAL
MULTIGRID COMMUNITY.

INTERNATIONAL MULTIGRID CONFERENCE
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Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

ENGINEERING RESEARCHER

CONTACT WITH M-G MATHEMATICIANS WAS BENEFICIAL

7. What were the conference's good and bad points?

BAD - THE CONFERENCE ROOM WAS TOO SMALL

GOOD - EVERYTHING ELSE

8. In your opinion, was the conference a success or failure?

SUCCESS

9. Would you like to see another MG Conference (who, when and where)?

YES, EVERY TWO YEARS OR SO, ALTERNATING BETWEEN NORTH AMERICA AND EUROPE

10. Additional comments:

THANKS FOR THE GOOD WORK MS THOMAS!

Grey M. Johnson

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

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CONF. COORD. & INSTITUTES

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

*Environment was most attractive, however, I don't ski!
Lack of dining facilities is a problem; Copper Mountain's handling
of food arrangements was courteous & enthusiastic, but disorganized
and sometimes a bit crude. The accommodations were pleasant, but including*

2. From which lectures or types of lectures did you benefit most? *Lecture + meeting facilities are good.*
- These are so specialized that they are all of interest. My main interests were in fluid dynamics, but general ideas are of great value in this subject.*

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Timing was fine, program materials of the best sort to appear so far at a general multigrid conference. Papers were generally of very high quality.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

No question a great deal was learned - can't tell a priori which ideas will be of most use in future.

5. How did the conference contribute to your own professional activities?

Main benefit, aside from technical content, is opportunity to meet other practitioners. Such things are essential to professional activity.

INTERNATIONAL MULTIGRID CONFERENCE
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CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

I'm a basic researcher by nature, a practitioner by necessity. No question that the spectrum of interests present was one of the major strengths of the conference.

7. What were the conference's good and bad points?

(Covered rather thoroughly above)

8. In your opinion, was the conference a success or failure?

This is clearly a success, but see 9.

9. Would you like to see another MG Conference (who, when and where)?

Yes; however, it should be noted that it takes a while in this field before there is good deal of quality material to present. Frequency may be increasing of quality.

10. Additional comments:

Douglas R. McCarley
Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

A good relaxing environment

2. From which lectures or types of lectures did you benefit most?

Most were beneficial, both general and topical

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

It was very usefull to have the afternoons free

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

Multigrid in fluid flow problems

5. How did the conference contribute to your own professional activities?

New contacts

INTERNATIONAL MULTIGRID CONFERENCE
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Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

Basic researcher. The contact with real application
was useful.

7. What were the conference's good and bad points?

Good points: Broad cross section of interests, ample opportunity
for interaction

Bad points: Banquet fare was adequate but needing

8. In your opinion, was the conference a success or failure?

9. Would you like to see another MG Conference (who, when and where)?

Yes, a year or two, Vail

10. Additional comments:

Steve Schaffer

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

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CONFERENCE QUESTIONNAIRE

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CONFERENCE
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Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

*it was very pleasant, and had a good effect.
Having talks in the morning and evening rather than afternoon,
was especially a good idea.*

2. From which lectures or types of lectures did you benefit most?

*those on new research topics such as AMG,
and accessible theory talks like Anne Greenbaum's*

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

very well planned

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

*learning the problems and successes of algebraic
multigrid was important to me as well as informal
conversations with attendees*

5. How did the conference contribute to your own professional activities?

*it stimulated several areas of research I'm
pursuing, particularly on Helmholtz equations*

INTERNATIONAL MULTIGRID CONFERENCE
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CONFERENCE QUESTIONNAIRE
Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

basic researcher. I benefited from learning about some
of the problems faced by people at Exxon in ecosystems

7. What were the conference's good and bad points?

The gap between the really theoretical work and really applied
was so great people had trouble bridging it. But the mix of
topics was quite good and I have a feel for the current state of the art.

8. In your opinion, was the conference a success or failure?

success

9. Would you like to see another MG Conference (who, when and where)?

yes, in about 2 years. Almost an exact repeat
would be fine or it could be given by Max Hymen,
Israel Derby at Los Alamos

10. Additional comments:

John Van Rosendale
Name Optional

25.5.83

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

DR. H. HOLSTEIN
DEPT. COMPUTER SCIENCE
UNIV. COLLEGE OF WALES
ABERYSTWYTH
GT. BRITAIN SY23 3BZ

CONFERENCE QUESTIONNAIRE

Please return by May 30 ← *Sorry!*

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Interesting & convenient

2. From which lectures or types of lectures did you benefit most?

Theoretical aspects of MG.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

*4 sessions in mornings rather heavy. Spread of topics good.
Little time for discussion at end of papers. Could some formal
discussion ~~sessions~~ ^{sessions} have been included in the planning?*

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

- 1. MG content*
- 2. Good ~~and~~ selection of speakers, for meeting contact*
- 3. model for Bristol MG meeting.*

5. How did the conference contribute to your own professional activities?

Hope to apply MG methods to Non Newtonian problems

*Dear Jean. Thanks for a pleasant conference and
for help received afterwards. Would you please enclose
handwritten ~~handwritten~~ ^{handwritten} ~~handwritten~~*

INTERNATIONAL MULTIGRID CONFERENCE
APRIL 5-8, 1983
CONFERENCE QUESTIONNAIRE
Page 2

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6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

7. What were the conference's good and bad points?

8. In your opinion, was the conference a success or failure?

9. Would you like to see another MG Conference (who, when and where)?

10. Additional comments:

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

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MAY 31 1983

CONFERENCES
& INSTITUTES

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Physical environment was very nice to say the least

2. From which lectures or types of lectures did you benefit most?

Most interested in those lectures dealing with the practical implementations of MG

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Well thought out and planned. Difficult to see how it could have been any better.

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

Yes. A great deal about algorithm multigrid

5. How did the conference contribute to your own professional activities?

Contact with individuals for training seminar work is being helpful.

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Page 2

6. What are your activities (practitioner, basic researcher, observer, etc.)?
Did you have beneficial contact with others involved in different activities?
(e.g., As a basic researcher, did you benefit from contact with real applica-
tions or the converse?)

*Since research on development of numerical method
for FD Yes.*

7. What were the conference's good and bad points?

Good: Location, organization, participants

Bad: Meeting room was too small

8. In your opinion, was the conference a success or failure?

Success

9. Would you like to see another MG Conference (who, when and where)?

*Yes. Who: Whoever is crazy enough to put up with even a
week*

When: Spring 1985

Where: New Orleans, New England etc area, Canada

10. Additional comments:

Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

MAY 01 1983

CONFERENCE
& INSTITUTES

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

Very pleasant.

2. From which lectures or types of lectures did you benefit most?

Got good general background from most of them.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

good

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

*yes I was impressed by the wide applicability
of the multigrid approach.*

5. How did the conference contribute to your own professional activities?

*I intend to use the multigrid approach at the
first opportunity*

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

As a computer scientist and consultant I had the chance to talk with people who may be dealing with me professionally in the future, as well as some I am dealing with now.

7. What were the conference's good and bad points?

The good points were: (a) no simultaneous sessions (b) well organized, punctual presentations (c) proceedings immediately available — bad points: wednesday night's dinner

8. In your opinion, was the conference a success or failure?

Definitely a success.

9. Would you like to see another MG Conference (who, when and where)?

Yes. Same time and place next year.

10. Additional comments:

W. Roy Rivest
Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
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Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

The atmosphere was relaxed, which was
very beneficial.

2. From which lectures or types of lectures did you benefit most?

AMG and Spectral methods.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

AMG, Spectral multigrid

5. How did the conference contribute to your own professional activities?

We are attempting to apply
multigrid methods to atmospheric
science problems

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

practitioner/basic researcher in geophysical fluid dynamics.

7. What were the conference's good and bad points?

Fairly good mix of ^{research} activities by participants. We need more geophysical fluid dynamicists interested.

8. In your opinion, was the conference a success or failure?

Success!

9. Would you like to see another MG Conference (who, when and where)?

I would very much like to see the multigrid activities of CSU flourish. Perhaps another conference in about 2 years would be helpful for this.

10. Additional comments:

Wayne Schubert
Name Optional

INTERNATIONAL MULTIGRID CONFERENCE

APRIL 5-8, 1983

COPPER MOUNTAIN, COLORADO

CONFERENCE QUESTIONNAIRE

Please return by May 30

To: Gloria Jean Thomas, Conference Coordinator
Department of Conferences and Institutes
Rockwell Hall
Colorado State University
Fort Collins, Co 80523

1. What do you think about the environment and how it affected the conference?

The setting and facilities were quite pleasant and contributed to the success of the conference.

2. From which lectures or types of lectures did you benefit most?

I particularly enjoyed the grouping of AMG lectures.

3. Please comment on the planning of the schedule and program (timings, topics, etc.)

Well-planned

4. Please comment on the educational value of the conference. Did you learn anything from attending the conference? If so, what specific areas were important to you?

I think I learned the most about AMG. Many of the other talks were too short to really get anything more than a superficial understanding - but this from a non-expert in MG.

5. How did the conference contribute to your own professional activities?

I made contacts with people working in this area which will be valuable for future MG work.

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6. What are your activities (practitioner, basic researcher, observer, etc.)? Did you have beneficial contact with others involved in different activities? (e.g., As a basic researcher, did you benefit from contact with real applications or the converse?)

Novice MGR. Yes, I benefitted.

7. What were the conference's good and bad points?

Good ones have already been mentioned above. Bad one was that we were too crowded with those big tables.

8. In your opinion, was the conference a success or failure?

Success, highly successful

9. Would you like to see another MG Conference (who, when and where)?

Yes, anywhere (who?)

10. Additional comments:

R Sweet

Name Optional

**DATA
FILM**

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