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13. ABSTRACT (Maximum 200 words) To assure long-term availability of data sets collected during the Coordinated Eastern Arctic Experiment (CEAREX), and other relevant Eastern Arctic data, a CD-ROM has been prepared and is available for distribution. Titled "Eastern Arctic Ice, Ocean and Atmosphere Data, Volume 1, CEAREX-1", the disc contains meteorology, hydrography (CTDs), bio-physical sampling, bathymetry, sea ice acceleration, sea ice stress, sea ice deformation, and ambient noise/acoustics samples. The disc is the first in a planned series that will contain CEAREX, MIZEX (Marginal Ice Zone Experiment), and other related data. Distribution began in December 1991.			
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NATIONAL SNOW AND ICE DATA CENTER

CIRES, CAMPUS BOX 449
UNIVERSITY OF COLORADO AT BOULDER
BOULDER COLORADO 80309



DATA MANAGEMENT FOR THE COORDINATED EASTERN ARCTIC EXPERIMENT

Roger G. Barry and Claire S. Hanson

National Snow and Ice Data Center
Cooperative Institute for Research
in Environmental Sciences
University of Colorado at Boulder

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COOPERATIVE INSTITUTE FOR RESEARCH
IN ENVIRONMENTAL SCIENCES,
UNIVERSITY OF COLORADO AT BOULDER
BOULDER, COLORADO 80309-0449

TELEPHONE: (303) 492-5171
TELEX: 7401428 WDCA UC
FAX: (303) 492-2488
TELEMAIL: (NBS/DO/OMNET) MAIL/USA

DATA MANAGEMENT FOR THE COORDINATED EASTERN ARCTIC EXPERIMENT

The goal of this project was to assure long-term availability of the data sets collected during the Coordinated Eastern Arctic Experiment (CEAREX) and other relevant Eastern Arctic data, in order to facilitate research leading to an enhanced understanding of Arctic processes.

The overall objective of the project was to obtain CEAREX data from investigators and format the data for mastering on a series of CD-ROM discs. The discs, distributed back to the investigators and to other interested researchers, provide a "distributed archive" for the CEAREX data.

Data sets were transferred to NSIDC by designated "Data Set Managers" at Scripps Institution of Oceanography, Naval Postgraduate School, McPhee Research, Inc., and the Naval Research Laboratory, who received data from each investigator in the hydrography, bio-physical, meteorology, station and buoy position, and bathymetry groups, and provided uniform, quality-checked files to NSIDC on tape, diskette, or by "ftp" on the Internet. Individual investigators in the remaining subject areas provided quality-checked files directly to NSIDC. At NSIDC, files were transferred from tape or diskette to the NSIDC computer system for final format checking. Review, editing and augmentation of documentation files was completed at NSIDC with the assistance of the Data Set Managers. Data were placed on the CD-ROM in ASCII format, to ensure maximum portability among existing computer platforms (i.e. IBM PC, Apple Macintosh, DEC VAX, Unix workstations). Whenever possible existing "standard" or widely-used data formats were employed. There is no executable software on the CD-ROM, although some source code in "C", supporting use of the station and buoy position files, was provided by the investigator and is delivered on the CD-ROM.

Data in the final form were transferred to 9-track magnetic tapes and shipped to the CD-ROM mastering facility on 23 August 1991. A test master CD-ROM ("disc") was received at NSIDC on 12 September 1991. Resulting from some incorrect assumptions made by the mastering facility, the test disc was found to be incorrectly formatted. However, the National Geophysical Data Center of NOAA, continuing its practice of sharing resources with us, made its CD-ROM mastering facility available to NSIDC to complete the project. (NSIDC is operated for NESDIS/NGDC as part of NOAA's Cooperative Agreement with the University of Colorado). Local mastering permitted monitoring data integrity at each step of the process.

A "one-off", a write-once laser disc suitable for replication onto CD-ROM discs for distribution, was produced and tested on IBM PC and Apple Macintosh computers. All files were readable, with consistent formats and correct file sizes. The mastering process had been shortened from nearly three weeks (including mailing tapes and processing at the mastering vendor location) to two hours, with complete control over the process.

The first CD-ROM volume, replicated from the "one-off" by a commercial CD-ROM facility, was distributed to CEAREX investigators in December 1991. The remainder of the CEAREX Data Management project at NSIDC was devoted to defining the level of effort required to obtain and format selected current meter and other velocity data sets from CEAREX and other Eastern Arctic campaigns, for inclusion on future CD-ROMs in the Eastern Arctic series.

The primary publication from this project is the CD-ROM titled *Eastern Arctic Ice, Ocean and Atmosphere Data, Volume 1, CEAREX-1*. This disc is the first in a planned series of CD-ROMs that will contain CEAREX, MIZEX and other relevant sea ice, ocean and atmosphere data from the Eastern Arctic. Distribution began in December 1991; 75 discs have been distributed at no charge to CEAREX investigators, 14 have been distributed to other interested researchers for \$50 each.

A copy of the disc was provided to the National Oceanographic Data Center (NODC) of NOAA, as a mechanism to transfer the hydrography data to NODC for their archive. NODC reviewed these data, and in September 1992 provided a list of format errors in several of the files, now in the process of being corrected at NSIDC for future distribution.

A brief paper describing this pilot CD-ROM project was published in *Arctic Research of the United States* (Hanson, 1992) and a note in *EOS* (Anon., 1992) have publicized availability of the CD-ROM. In addition, NSIDC has distributed a *Data Announcement* (copy attached) describing the CD-ROM to a mailing list of approximately 350 individuals who are active in sea ice and remote sensing research.

References:

Anon. (1992) CEAREX data available on CD-ROM. *EOS, Transactions of the American Geophysical Union*, 73(12), p. 130.

Hanson, C.S. (1992) CD-ROM of CEAREX data. *Arctic Research of the United States*, no. 6, p. 120-121.

National Snow and Ice Data Center (1991) *Eastern Arctic Ice, Ocean and Atmosphere Data, Volume 1, CEAREX-1*. CD-ROM.

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Attachment 1.

Eastern Arctic Ice, Ocean and Atmosphere - Volume 1
CEAREX-1 Directory Structure

\BATHYMET Directory contains documentation file and 6 data files.

\BIOPHYS Directory contains documentation file and 6 data files.

\DOCUMENT Directory contains 15 files. Please first read the file README.1ST.

\HYDROG Directory contains documentation file and 9 subdirectories:
 \BIOCTD 7 data files \LAMONT 3 data files
 \BOTTLE 1 data file \OCAMP 1 data file
 \EUBEX 2 data files \SHIP 5 data files
 \FRAM 26 data files \SIZEX 2 data files
 \HELO 2 data files

\METEOR Directory contains documentation file and two sub-directories:
 \SURFACE 12 data files (CEAREX and MIZEX data)
 \UPPER 10 data files (CEAREX and MIZEX data)

\NOISE Directory contains two sub-directories:
 \ACOUSTIC Documentation file and 3 data files.
 \AMBIENT Documentation file and one data file.

\POSITION Directory contains documentation file and two sub-directories:
 \POSDAT 27 data files
 \POSPRG 16 program files (source code in C)

\SEAICE Directory contains three sub-directories:
 \ACCEL Documentation file and 77 data files.
 \DEFORM Documentation file and 6 data files.
 \STRESS Two sub-directories:
 \BDM Documentation file and 14 data files.
 \CRREL Documentation file and 6 data files.

EASTERN ARCTIC ICE, OCEAN AND ATMOSPHERE DATA, VOLUME 1: CEAREX CD-ROM

DATA ANNOUNCEMENT

91-GLA-59.1

NSIDC announces a new CD-ROM containing data from the Coordinated Eastern Arctic Experiment (CEAREX), a large field program that took place in the Greenland and Norwegian seas and north of Svalbard, September 1988 - May 1989. The disc contains several types of data: meteorology; sampling positions; bathymetry; hydrography (CTDs); bio-physical data; sea ice acceleration, deformation and stress; sample ambient noise and acoustics data. The meteorology data files include all CEAREX and the surface and upper air data from the Marginal Ice Zone Experiment (MIZEX-83, MIZEX-84 and MIZEX-87).



The CEAREX-1 CD-ROM was produced by NSIDC with support from the Office of Naval Research. Comments from users of this pilot disc will assist in improving future versions of the disc, and in the design of subsequent discs in the series, *Eastern Arctic Ice, Ocean and Atmosphere Data*. The series, will contain relevant Eastern Arctic data sets identified by the CEAREX and MIZEX communities with input from NSIDC's Advisory Panel and other data management and user community advisory groups. For example, some CTD data from the Eurasian Basin Experiment (EUBEX) is included on this disc, and NSIDC hopes

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World Data Center/National Snow and Ice Data Center
National Geophysical Data Center, NOAA
Boulder, Colorado 80503



to expand the scope of the bathymetry data base to include all available data collected in the Eastern Arctic, not merely during CEAREX. Future discs may contain corrected or updated versions of the data sets on CEAREX-1. Data users are urged to contact the CEAREX archive at NSIDC to determine the latest version of particular data sets of interest, ESPECIALLY BEFORE USING ANY OF THE DATA IN WORK PLANNED FOR PUBLICATION.

Documentation: Complete user documentation is provided for each data set in text files in the CD-ROM directory \DOCUMENT, with relevant files repeated in each data set directory.

Hardware requirements: The CD-ROM is mastered to the ISO 9660 standard and can be read on any CD-ROM drive meeting the ISO 9660 standard, installed on an IBM PC or compatibles, Apple Macintosh, DEC VAX, or SUN workstations. Configuration of the system and memory/disk requirements are dependent on the user's application of the data.

Software requirements: Files are ASCII and can be read on Apple, DEC, IBM or SUN platforms, using any text editor or Fortran, C, or any other high-level programming language. No software is contained on the disc except source code in C language provided by M. McPhee for reading and manipulating his sampling position data. No support for this source code is available from NSIDC.

Ordering Information

CEAREX CD-ROM, including shipping and handling \$50.00

Prices shown are effective through September 30, 1992; please inquire for a current price quote. Prepayment, or a written purchase order, is required. Please make check or money order, in U.S. dollars, payable to *University of Colorado, WDC/NSIDC*. Telephone orders are accepted with written confirmation. Orders may be charged to a Mastercard or VISA card by telephone or letter. Please include credit card account number, expiration date, telephone number, and your signature with order. There is a 3% surcharge on credit card orders.

A limited number of discs are available from this first pressing. Priority will be given to ONR-funded requesters.

Researchers funded by ONR to participate in the data collection or analysis phases of CEAREX are eligible to receive the CD-ROM without charge. Please provide your ONR grant number when contacting NSIDC.

For further information, or to place an order for data, call or write:

CEAREX Archive
World Data Center-A for Glaciology (Snow and Ice)
National Snow and Ice Data Center
CIRES, Box 449
University of Colorado
Boulder, Colorado 80309
U.S.A.
Telephone: (303) 492-1834 or (303) 492-5171
Telex: 7401426 WDCA UC
Telemail: [NSIDC/OMNET] MAIL/USA (Attn: Data Request Services)
VAX Mail KRYOS::NSIDC via SPAN
FAX: (303) 492-2468