PROGRAM

63RD ANNUAL MEETING OF THE AMERICAN METEOROLOGICAL SOCIETY INCLUDING THE CONFERENCE ON CLIMATE/ENERGY INTERACTIONS, JANUARY 10-13, 1983, NEW ORLEANS, LA.

AMS National Officers
President: Richard E. Hallgren
Executive Director: Kenneth C. Spengler
President-Elect: Earl G. Droessler
Secretary: James D. Belville
Treasurer: Rene Brunet

AMS 1983 Central Gulf Coast Chapter Officers
Chairman: Julian C.T.E. Blomley
Vice-Chairman: Glenn D. Hamilton
Secretary: Paul Janota
Treasurer: John R. Mather

AMS 1982 Committee on Applied Climatology
Wayne M. Wendland, Chairman
Arnold Court
Robert F. Dale
Edward S. Epstein

Program Arrangers
63rd AMS Annual Meeting
Richard E. Hallgren, President, American Meteorological Society, and Director, National Weather Service (NWS)/NOAA, Silver Spring, Md.
Warren M. Washington, National Advisory Committee on Oceans and Atmosphere (NACOA), and NCAR, Boulder, Colo.
Jay S. Winston, Climate Analysis Center, NWS/NOAA, Washington, D.C.

Conference on Climate/Energy Interactions
Program Chairman: John S. Perry, National Academy of Sciences, Washington, D.C.
Assistant Chairman: Harry Moses, U.S. Department of Energy (DOE), Washington, D.C.

Local Arrangements Chairman
Aylmer H. Thompson

Synopsis of Sessions
Jan 9 Sun 7:00 pm Registration
Jan 10 Mon 8:00 am Registration (continued)
Mon 9:00 am Session A1: Reports to the Community
Mon 10:00 am Spouses’ Coffee
Mon 2:00 pm Session A2: Provision of the Weather Services to the Nation: Public and Private (Panel Discussion)
Mon 5:00 pm AMS Annual Business Meeting
Mon 6:00 pm Icebreaker
Jan 11 Tues 8:30 am Session A3: Review of Global and Regional Climate Fluctuations in 1981-82 (Joint Session with the Second Conference on Climate Variations)

Conference on Climate/Energy Interactions
(Two sessions being considered)

Jan 12 Wed 8:30 am Session B3: Environmental Consequences of Energy Production—II
Jan 12 Wed 11:00 am Session B4: Atmospheric and Climatic Information for Energy Production and Distribution—II

Jan 13 Thurs 9:00 am Session B5: Climatic Aspects of Renewable Energy Alternatives
Thurs 10:30 am Session B6: Meteorological Aspects of Response to Energy-Related Emergencies

General Information
The 63rd Annual Meeting of the American Meteorological Society including the Conference on Climate/Energy Interactions (co-sponsored by the U.S. Department of Energy) will be held 10-13 January 1983 at the Sheraton New Orleans Hotel in New Orleans, La., in conjunction with the Second Conference on Climate Variations (10-14 January). The AMS Committee on Applied Climatology is cooperating in the Conference on Climate/Energy Interactions. The AMS Central Gulf Coast Chapter will be the local host.

Hotel
All sessions will be held at the Sheraton New Orleans Hotel. A block of rooms has been set aside for the meeting at the following special rates: $48, single; $62, double; $205-$360, one-bedroom suite; $307, two-bedroom suite (plus state and local taxes, presently 10%). A deposit equal to one night’s stay is required; personal check, money order, or a valid American Express card number and expiration date are acceptable. We strongly urge you to request a written confirmation of your reservation and to bring it with you to the hotel. Kindly make your reservations prior to 3 December 1982 by writing directly to Sheraton New Orleans Hotel, 100 Canal St., New Orleans, La. 70130 (tel: 504-325-2300). Be sure to mention the American Meteorological Society’s name when making reservations. For your convenience in securing accommodations, reservation cards are available from AMS.
Registration
The AMS registration desk will be open Sunday, 10 January, from 7:00 pm to 9:00 pm and on Monday through Friday from 8:00 am to 5:00 pm. Registration fees are: $65, AMS members, speakers, and session chairmen; $85, nonmembers; $45, AMS Central Gulf Coast Chapter members; $35, undergraduate and graduate students. We urge you to preregister by sending the appropriate remittance together with your name, affiliation, and complete mailing address to American Meteorological Society, 45 Beacon St., Boston, Mass. 02108, Attn: 63rd AMS Annual Meeting.
Registrants may attend sessions of the Second Conference on Climate Variations at no additional fee.

Poster Sessions
There is a possibility that poster sessions will be included in the Conference on Climate/Energy Interactions. If they can be arranged, a program addendum will be distributed at the meeting. Also, if time permits, an announcement will be made in the BULLETIN.

Transportation
Airport bus/limousine services are available from New Orleans International Airport to the Sheraton New Orleans Hotel.

Exhibits
Both a combined book exhibit and commercial displays will be featured. For information, contact AMS.

Spouses' Coffee
A coffee get-together for spouses, families, and friends of conference registrants will be held on Monday, 10 January, at 10:00 am. Room information will be available at the AMS registration desk. There is no formal social program planned. The coffee get-together will enable guests to become acquainted and to plan tours should they so wish.

Icebreaker
There will be an Icebreaker (cash bar) on Monday, 10 November, at 6:00 pm.

AMS Awards Banquet
The AMS Awards Banquet will be held on Wednesday, 12 January, at 7:30 pm, preceded by a cocktail reception at 6:30 pm. Tickets will be available for purchase at the AMS registration desk.

PROGRAM
Sun Jan 9 7:00 pm
Mon Jan 10 8:00 am
Mon Jan 10 9:00 am Session A1: Reports to the Community
Chairman: Richard E. Hallgren, President, American Meteorological Society, and Director, NWS/NOAA, Silver Spring, Md.

Mon Jan 10 10:00 am

Mon Jan 10 10:00 am Spouses' Coffee

Mon Jan 10 1:00 pm

Mon Jan 10 2:00 pm Session A2: Provision of the Weather Services to the Nation: Public and Private (Panel Discussion)
Chairman: Warren M. Washington, Member, NACOA, and NCAR, Boulder, Colo.

Session Abstract
The provision of weather services to the nation is a mix of both government and private services. Because of the need to curtail federal government expenditures, there has been a re-examination of what is the proper role of the government and private sectors. Many questions are actively being examined such as the implementation of user fees; what services ought to be provided by private organizations or by federal, state, or local governments who should issue weather warnings; how to account for quid pro quo contributions to the weather services; how the new technology, such as Doppler radar, should be introduced; etc. The National Advisory Committee on Oceans and Atmosphere has outlined its recommendations in a report to the government on the above issues. The assembled panel will examine these questions.
Panelists

Werner A. Baum, Florida State Univ., Tallahassee, Fla.
George S. Benten, Johns Hopkins Univ., Baltimore, Md.
Robert G. Fleagle, Univ. of Washington, Seattle, Wash.

Mon Jan 10
5:00 pm

AMS Annual Business Meeting

Introductory remarks by the President. Richard E. Hallgren.
Remarks by the President-Elect. Earl U. Droessler.

Mon Jan 10
6:00 pm

Icebreaker

Tues Jan 11
8:30 am

Session I: Review of Global and Regional Climate Fluctuations in 1981–82 (Joint Session with the Second Conference on Climate Variations—see Session 3 of that program)

Chairman: Jay S. Winston, Climate Analysis Center, NWS/NOAA, Washington, D.C.

Session Abstract

The United States experienced a year of considerably more storminess than usual in association with a combination of predominantly active troughiness over the eastern Pacific and the West, and of frequent incursions of very cold air masses forced into the country by recurrent blocking activity and depressed polar troughs. Although the flow pattern was often quite variable from month to month, the winter season was generally cold and wet (or snowy) in many parts of the country and the other seasons had copious precipitation in most areas. Thus, virtually all but a few remnants of the extensive drought of 1980–81 were eliminated. From late winter into the summer, the upper subtropical westerlies became unusually strong over most longitudinal sectors of both the Northern and Southern Hemispheres. Within these anomalous subtropical westerly belts, there were well-defined waves that brought unusual amounts of cloudiness and precipitation to these latitude zones. It is notable that in the Northern Hemisphere, these increases in cloudiness and precipitation, with their substantial impacts on earth-atmosphere heat sources, occurred in the same latitudinal belts in which the stratospheric dust emanating from the El Chichon eruptions spread westward across the Pacific in April and May 1982. Thus, the probable broad-scale radiative impacts of the volcanic dust may be difficult to separate from the unusual natural climatic anomaly of the subtropics in this period.

These and other major climatic events and anomalies of 1981–82 are discussed here in terms of anomalous circulations of the troposphere and lower stratosphere, atmospheric and sea surface temperatures, cloudiness and precipitation, and snow and ice.

This review is based primarily on material presented at the seventh annual Climate Diagnostics Workshop, which was jointly organized this year by the National Center for Atmospheric Research and the Climate Analysis Center of NOAA. The workshop was held 18–22 October 1982 in Boulder, Colo. A principal topic of this workshop was the diagnosis of the major climatic events of the year September 1981 through August 1982.

Several of the speakers at the workshop will present this review. Names of the speakers and titles of their talks will be announced at the meeting.

Conference on Climate/Energy Interactions

(In addition to the following, poster sessions are being considered.)

Tues Jan 11
8:15 am

Opening Remarks

John S. Perry, National Academy of Sciences; and Harry Moses, U.S. DOE, Washington, D.C.

Tues Jan 11
8:30 am

Session B1: Environmental Consequences of Energy Production—1

Chairman: J. Christopher Bernabo, Interagency Task Force on Acid Rain, Washington, D.C.

B1.1 Acid rain: Impacts and chemical climatology. Ellis B. Cowling, North Carolina State Univ., Raleigh, N.C.


B1.4 Measurement and monitoring of dry deposition of acidic substances. Bruce B. Hicks, Atmospheric Turbulence and Diffusion Lab./NOAA, Oak Ridge, Tenn.

B1.5 Capabilities and limitations of simulation models of long-range transport deposition. Jack D. Shannon, Argonne National Lab., Ill.

B1.6 Chemical climatology and acidic depositions of the Adirondacks. Volker A. Mohnen, John A. Kadlecek, and Austin W. Hogan, State Univ. of New York at Albany (SUNYA), N.Y.


Tues Jan 12 2:00 pm

Session B2: Environmental Consequences of Energy Production—II

Chairman: Frederick Koomanoff, U.S. DOE, Washington, D.C.


B2.3 Parameters driving a carbon dioxide-induced climate change. Ralph M. Rotty, Institute for Energy Analysis, Oak Ridge, Tenn.

B2.4 Detecting climatic effects of increased carbon dioxide in the atmosphere. William H. Klein, Univ. of Maryland, College Park, Md.


Wed Jan 12 8:30 am

Session B3: Atmospheric and Climatic Information for Energy Production and Distribution—I


B3.1 The role of meteorological and oceanographic consultants in support of offshore petroleum exploration and production—An overview. Jerry A. Williams, Oceanroutes, Inc., Palo Alto, Calif.

B3.2 The use of climatic information and forecasts to support operations of the energy industry. Keith W. Veigas, Vega Weather International, Houston, Tex.

B3.3 Climate services for offshore hydrocarbon exploration on Canada’s east coast. A. D. J. O’Neill, Atmospheric Environment Service (AES), Bedford, N.S., Canada.

B3.4 The availability and utilization of climatic data in Arctic offshore hydrocarbon exploration and production. J. B. Maxwell, AES, Downsview, Ont., Canada.

B3.5 International implications of seasonal climate forecasting. Edith Brown Weiss, Georgetown Univ., Washington, D.C.

B3.6 Climatic information to serve the energy industry—A state perspective. Thomas B. McKee and Nolan J. Doesken, Colorado State Univ., Ft. Collins, Colo.

B3.7 On-line weather forecasting and research as related to use in the utility industry. Robert E. Amsberry, El Paso Natural Gas Co., Tex.

B3.8 Degree days and electrical energy consumption. Robert G. Quayle, National Climatic Center/NOAA, Asheville, N.C.

Wed Jan 12 11:15 pm

Session B4: Atmospheric and Climatic Information for Energy Production and Distribution—II


B4.4 The impact of the urban heat island on residential utility demand. Ellen Cooter, Oklahoma Climatological Survey, Norman, Okla.
B4.5 Energy-related climate activities and services of the Climate Analysis Center. James L. Krasnoss, Climate Analysis Center, NWS/NOAA, Washington, D.C.

B4.6 An operational data base for energy applications. James D. Laver and T. R. Heddinghaus, Climate Analysis Center, NWS/NOAA, Washington, D.C.

B4.7 Contemporaneous relationships between global radiation and heating (cooling) degree days during severe winters (summers). Thomas R. Karl, National Climatic Center/NOAA, Asheville, N.C.

B4.8 Managing our climatic resources. Frank T. Quinlan, National Climatic Center/NOAA, Asheville, N.C.

B4.9 Development of climatological weather regimes relevant to the design of substation electrical equipment. Thomas W. Tesche, Systems Applications, Inc., San Rafael; and M. J. Hillyer, Chevron Research, Inc., Richmond, Calif.


B4.11 Retrofit options for buildings for more efficient energy use. Jack F. Roberts, Fanning, Fanning, and Agnew, Inc.

Cocktail Reception

AMS Awards Banquet

Session B5: Climatic Aspects of Renewable Energy Alternatives

Chairman: Roland Hulstrom, Solar Energy Research Institute, Golden, Colo.

B5.1 Climate and the performance of solar energy systems. Peter J. Robinson, Univ. of North Carolina, Chapel Hill, N.C.

B5.2 Climatically based methods used to inventory solar energy availability in British Columbia, Canada. John E. Hay, Univ. of British Columbia, Vancouver, B.C., Canada.


B5.5 Climate impact on the siting of biomass production facilities. E. Maxwell, V. Szwarc, and G. Folger, Solar Energy Research Institute, Golden, Colo.

B5.6 Climate resources and hydroelectric energy production in the Colorado River Basin. Lewis T. Moore and Richard H. Ives, Bureau of Reclamation, Washington, D.C.

B5.7 The USAF Environmental Technical Applications Center's role in DOD's energy conservation program. Hilda J. Elsholts, Gregory Myles, and William R. Schaub, Jr., USAF Environmental Technical Applications Center (ETAC), Scott AFB, Ill.

Panel Discussion with Session Chairman and Speakers

Moderator: Irwin Spickler, Nuclear Regulatory Commission, Washington, D.C.
PREPRINTS
SEVENTH CONFERENCE
ON
PROBABILITY AND STATISTICS IN ATMOSPHERIC SCIENCES
NOVEMBER 2-6, 1981 MONTREY, CALIFORNIA

Session Topics:

- Principal Components
- Weather Modification
- Climate Modeling
- Satellite Applications
- Atmospheric Systems
- Numerical Weather Prediction
- Evaluation and Verification
- Clouds and Visibility
- Markov Models
- Autoregressive Models
- Probability Models
- Radar
- Spatial Considerations
- Prediction of Continuous Variables

235 Pages

$15 AMS Members
$20 Nonmembers
(plus $2 postage/handling)

Send order & remittance to:
American Meteorological Society
45 Beacon St.
Boston, MA 02108
PROGRAM
SECOND CONFERENCE ON CLIMATE VARIATIONS OF THE AMERICAN METEOROLOGICAL SOCIETY, JANUARY 10-14, 1983, NEW ORLEANS, LA.

AMS National Officers
President: Richard E. Hallgren
President-Elect: Earl G. Droessler
Executive Director: Kenneth C. Spengler

AMS 1983 Central Gulf Coast Chapter Officers
Chairman: Julian C.T.E. Blomley
Vice-Chairman: Glenn D. Hamilton
Secretary: James D. Belville
Treasurer: Rene Brunet

AMS 1982 Committee on Climate Variations
Alan D. Hecht, Chairman
Henry F. Diaz
Gerald J. Oltbeiner
Robert P. Harnack
John Imrie
George Kukla
Michael MacCracken
Thompson Webb III
Jay S. Winston

Program Chairman
Alan D. Hecht

Local Arrangements Chairman
Aylmer H. Thompson

Synopsis of Sessions
Jan 9 Sun 7:00 pm Registration
Jan 10 Mon 8:00 am Registration (continued)
Mon 8:30 am Session 1: General Circulation and Global Climatic Variation
Mon 10:00 am Spouses' Coffee
Mon 1:30 pm Session 2: Regional Climate Variations
Mon 5:00 pm AMS Annual Business Meeting
Mon 6:00 pm Icebreaker
Jan 11 Tues 8:30 am Session 3: Review of Global and Regional Climate Fluctuations in 1981-82 (Joint Session with the 63rd AMS Annual Meeting)
Tues 1:30 pm Session 4: Climate Forecasting: A Review of Statistical and Dynamical Methods
Jan 12 Wed 8:30 am Session 5: The Southern Oscillation, El Nino, and Other Tropical-Extratropical Interactions
Wed 1:30 pm Session 6: Prediction, and Regional Climate Variation
Wed 6:30 pm Cocktail Reception
Wed 7:30 pm AMS Awards Banquet
Jan 13 Thurs 8:30 am Session 7: Relationships of the Climate System to CO2 and Other Aerosols
Thurs 1:30 pm Session 8: Oceanic and Cryospheric Variation and Relationships to Atmospheric Variation
Jan 14 Fri 8:30 am Session 9: Paleoclimate Reconstruction Diagnostics and Modeling
Fri 8:30 am Session 10: Climate Models-I
Fri 1:30 pm Session 11: Climate Models-II

General Information
The Second Conference on Climate Variations of the American Meteorological Society will be held 10-14 January 1983 at the Sheraton New Orleans Hotel in New Orleans, La., in conjunction with the 63rd AMS Annual Meeting including the Conference on Climate/Energy Interactions (10-13 January). The AMS Central Gulf Coast Chapter will be the local host.

Hotel
All sessions will be held at the Sheraton New Orleans Hotel. A block of rooms has been set aside for the meeting at the following special rates: $48, single; $62, double; $80-$85, one-bedroom suite; $107, two-bedroom suite (plus state and local taxes, presently 10%). A deposit equal to one night's stay is required; personal check, money order, or a valid American Express card number and expiration date are acceptable. We strongly urge you to request a written confirmation of your reservation and to bring it with you to the hotel. Kindly make your reservations prior to 3 December 1982 by writing directly to Sheraton New Orleans Hotel, 500 Canal St., New Orleans, La. 70110 (tel: 504-525-2900). Be sure to mention the American Meteorological Society's name when making reservations. For your convenience in securing accommodations, reservation cards are available from AMS.

Registration
The AMS registration desk will be open Sunday, 10 January, from 7:00 pm to 9:00 pm and on Monday through Friday from 8:00 am to 5:00 pm. Registration fees are $65, AMS members, speakers, and session chairmen; $55, nonmembers; $55, AMS Central Gulf Coast Chapter members; $35, undergraduate and graduate students. We urge you to preregister by sending the appropriate remittance together with your name, affiliation, and complete mailing address to American Meteorological Society, 45 Beacon St., Boston, Mass. 02108, Att: Second Conference on Climate Variations.

Registrants may attend sessions of the 63rd AMS Annual Meeting including the Conference on Climate/Energy Interactions at no additional fee.

Transportation
Airport bus/limousine services are available from New Orleans International Airport to the Sheraton New Orleans Hotel.
Exhibits

Both a combined book exhibit and commercial displays will be featured. For information, contact AMS.

Spouses' Coffee

A coffee get-together for spouses, families, and friends of conference registrants will be held on Monday, 10 January, at 1000 am. Room information will be available at the AMS registration desk. There is no formal social program planned. The coffee get-together will enable guests to become acquainted and to plan tours, should they so wish.

Icebreaker

There will be an Icebreaker (cash bar) on Monday, 10 November, at 6:00 pm.

AMS Awards Banquet

The AMS Awards Banquet will be held on Wednesday, 12 January, at 7:30 pm, preceded by a cocktail reception at 6:30 pm. Tickets will be available for purchase at the AMS registration desk.

PROGRAM

Sun Jan 9
7:00 pm

Registration

Mon Jan 10
8:00 am

Registration (continued)

Mon Jan 10
8:30 am

Session 1: General Circulation and Global Climatic Variation


1.2 Cloud-albedo and cloud-greenhouse effects: An evaluation using Nimbus-7 earth radiation budget (ERB) observations. George Ohring, National Earth Satellite Service (NESS)/NOAA, Washington, D.C., and Tel Aviv Univ., Israel.

1.3 Empirical relations between radiative flux, cloudiness, and other meteorological parameters. Daniel Wenkert and Andrew P. Ingersoll, California Institute of Technology, Pasadena, Calif.


1.5 Intra- and interannual variations of tropical circulations derived from satellite data. Anandu D. Vernekar and Robert Lutz, Univ. of Maryland, College Park, Md.

1.6 Seasonality in Southern Hemisphere eddy statistics at 500 mb. Kevin E. Trenberth, Univ. of Illinois, Urbana Champaign, Ill.


1.8 On the role of the seasonal cycle. David M. Straus, GSFC/NASA, Greenbelt, Md.

1.9 Horizontal energy propagation properties of the atmosphere and their interannual variation. Grant B. Branstator, NCAR, Boulder, Colo.

1.10 Evidence for a 40-70 day tropical-extratropical oscillation during November-March 1978-79. Klaus M. Weickmann, Univ. of Wisconsin, Madison, Wis.

1.11 Diagnostic studies of recent atmospheric blocking patterns. Stephen J. Colucci, State Univ. of New York at Albany (SUNYA), N.Y.

1.12 An investigation of the relationship between tropical convection and subtropical jet stream variability over the southwest Pacific Ocean. Oswaldo Garcia, ERL/NOAA; and Robert L. Grossman and Huijun Fan, Cooperative Institute for Research in Environmental Sciences (CIRES)/Univ. of Colorado, Boulder, Colo.


Mon Jan 10
10:00 am

Spouses' Coffee
Mon Jan 10 3:30 pm

Session 2: Regional Climate Variations

Co-Chairpersons: Henry F. Diaz, National Climatic Center/NOAA, Asheville, N.C.; and Reid A. Bryson, Univ. of Wisconsin, Madison, Wis.

2.1 Secular trends in rainfall and surface temperature at some urban and nonurban stations in the Indian region. A. Mary Selvam, J. S. Prakash, A. S. R. Murty, and B. V. Ramana Murty, Indian Institute of Tropical Meteorology, Poona, India.


2.3 Some spatial characteristics of drought duration in the United States. Thomas R. Karl, National Climatic Center/NOAA, Asheville, N.C.


2.5 A diagnosis of twentieth century temperature records at W. Lafayette, Ind. Ernest M. Agee, Purdue Univ., W. Lafayette, Ind.

2.6 Long-term fluctuation of daily maximum and minimum temperature at two New Mexico stations. Iven Bennett, Univ. of New Mexico, Albuquerque, N.Mex.

2.7 Recent climate variations and their impact on flooding in Illinois. Stanley A. Changnon, Jr., Illinois State Water Survey, Champaign, Ill.

2.8 A study of decadal temperature and precipitation variability at 10 long-period stations in the United States. Kevin C. Vining, Texas A&M Univ., College Station, Tex.

2.9 Secular fluctuations of temperature and precipitation in the western United States. Raymond S. Bradley, Univ. of Massachusetts, Amherst, Mass.

2.10 Temporal and spatial changes in mesoscale climatic patterns. Patrick J. Michaels, Univ. of Virginia, Charlottesville, Va.


2.12 Recent changes in monthly mean air surface temperatures over the contiguous United States. George J. Kukla and J. Gavin, Lamont-Doherty Geological Observatory of Columbia Univ., Palisades, N.Y.

Mon Jan 10 5:00 pm

AMS Annual Business Meeting

Introductory remarks by the President. Richard E. Hallgren.
Remarks by the President-Elect. Earl G. Droessler.

Mon Jan 10 6:00 pm

Icebreaker

Tues Jan 11 8:30 am

Session 3: Review of Global and Regional Climate Fluctuations in 1981-82 (Joint Session with the 63rd AMS Annual Meeting—see Session A3 of that program)

Chairperson: Jay S. Winston, Climate Analysis Center, NWS/NOAA, Washington, D.C.

Session Abstract

The United States experienced a year of considerably more storminess than usual in association with a combination of predominantly active troughiness over the eastern Pacific and the West, and of frequent incursions of very cold air masses forced into the country by recurrent blocking activity and depressed polar troughs. Although the flow pattern was often quite variable from month to month, the winter season was generally cold and wet (or snowy) in many parts of the country and the other seasons had copious precipitation in most areas. Thus, virtually all but a few remnants of the extensive drought of 1980-81 were eliminated. From late winter into the summer, the upper subtropical westerlies became unusually strong over most longitudinal sectors of both the Northern and Southern Hemispheres. Within these anomalous subtropical westerly belts, there were well-defined waves that brought unusual amounts of cloudiness and
precipitation to these latitude zones. It is notable that in the Northern Hemisphere, these increases in cloudiness and precipitation, with their substantial impacts on earth-atmosphere heat sources, occurred in the same latitudinal belts in which the stratospheric dust emanating from the El Chichon eruptions spread westward across the Pacific in April and May 1982. Thus, the probable broad-scale radiative impacts of the volcanic dust may be difficult to separate from the unusual natural climatic anomaly of the subtropics in this period.

These and other major climatic events and anomalies of 1981-82 are discussed here in terms of anomalous circulations of the troposphere and lower stratosphere, atmospheric and sea surface temperatures, cloudiness and precipitation, and snow and ice.

This review is based primarily on material presented at the seventh annual Climate Diagnostics Workshop, which was jointly organized this year by the National Center for Atmospheric Research and the Climate Analysis Center of NOAA. The workshop was held 18-22 October 1982 in Boulder, Colo. A principal topic of this workshop was the diagnosis of the major climatic events of the year September 1981 through August 1982.

Several of the speakers at the workshop will present this review. Names of the speakers and titles of their talks will be announced at the meeting.

---

**Session 4: Climate Forecasting: A Review of Statistical and Dynamical Methods (Invited Papers)**

Co-Chairpersons: William A. Sprigg, National Climate Program Office/NOAA, Rockville, Md.; and Allan H. Murphy, Oregon State Univ., Corvallis, Oreg.

4.1 A review of statistical/empirical approaches to short-term climate prediction. Tim P. Barnett, Scripps Institution of Oceanography, La Jolla, Calif.

4.2 A review of dynamic modeling approaches to short-term climate prediction. Kikura Miyakoda, Geophysical Fluid Dynamics Lab. (GFDL)/NOAA, Princeton, N.J.

4.3 The new look of the monthly and seasonal outlooks: Probabilities and their verification. Donald L. Gilman, Climate Analysis Center, NWS/NOAA, Washington, D.C.

4.4 Simple statistical and physical tools for long-range weather prediction. H. M. van den Dool, Royal Netherlands Meteorological Institute (KNMI), De Bilt, Netherlands.


---

**Session 5: The Southern Oscillation, El Nino, and Other Tropical-Extratropical Interactions**

Co-Chairpersons: Eugene M. Rasmusson and T. H. Carpenter, Climate Analysis Center, NWS/NOAA, Washington, D.C.

5.1 Atmospheric teleconnection from satellite observation. W. Ka-Ming Lau, GSFC/NASA, Greenbelt, and P. H. Chan, Applied Research Corp., Landover, Md.

5.2 Climatology of the Indian summer monsoon during the last 25 years. Daniel L. Cadet and B. Diehl, Florida State Univ., Tallahassee, Fla.

5.3 Interaction of the monsoon and Pacific trade wind field. Tim P. Barnett, Scripps Institution of Oceanography, La Jolla, Calif.

5.4 Interannual variability of monsoon rainfall and surface pressure. D. Paulino and Jagadish Shukla, GSFC/NASA, Greenbelt, Md.

5.5 Climate variation in the tropical Pacific and United States: A look at their statistical properties and possible associations. Kirby J. Hanson and Gerald Cotton, Air Resources Lab. (ARL)/NOAA, Boulder, Colo.

5.6 The interactive response of the Walker Circulation to SST anomalies in the Pacific. Mary Alice Rennick, Naval Postgraduate School, Monterey, Calif.


5.8 Rainfall in the tropical Pacific associated with the Southern Oscillation. John D. Horel, Scripps Institution of Oceanography, La Jolla, Calif.


5.12 An exploration on the lag between El Niño and atmospheric response. Peter J. Webster, Naval Postgraduate School, Monterey, Calif.

Wed Jan 12
1:30 pm

Session 6: Prediction, and Regional Climate Variation

Co-Chairpersons: Robert P. Harnack, Rutgers Univ., New Brunswick, N.J.; and William A. Sprigg, National Climate Program Office/NOAA, Rockville, Md.

6.1 Seasonal associations between regional anomalies of temperature and precipitation in the United States and 700 mb Western Hemisphere height profiles. Henry F. Diaz, National Climatic Center/NOAA, Asheville, N.C.; and Jerome Narnias, Scripps Institution of Oceanography, La Jolla, Calif.

6.2 Variability of the summer monsoon in Mexico and the southwestern United States. Arthur V. Douglas, Creighton Univ., Omaha, Nebr.


6.4 Validation and relative credibility of 700 mb lag correlation maps for use in long-range prediction. Robert E. Livezey, Climate Analysis Center, NWS/NOAA, Washington, D.C.

6.5 Prediction of seasonal rainfall totals based on persistences in cyclone frequency EOFs. Bruce H. Hayden and William Smith, Univ. of Virginia, Charlottesville, Va.

6.6 Periodic behavior of December mean temperatures in the north central United States as a predictor. Reid A. Bryson and Douglas Pearson, Univ. of Wisconsin, Madison, Wis.

6.7 Quasi-operational climate prediction with a thermodynamic model. Julian Adem, Centro de Ciencias de la Ateosfera, Mexico DF, Mexico; and William L. Dorn and R. Goldeberg, Lamont-Doherty Geological Observatory of Columbia Univ., Palisades, N.Y.

6.8 Regression forecasting of monthly temperature and precipitation in the seasonal range with the global upper air network and sea surface temperature. Ernest C. Kung, Hiroshi Tanaka, and Paul H. Chan, Univ. of Missouri, Columbia, Mo.

6.9 Intraseasonal tropospheric circulation variability and its association with concurrent oceanic and atmospheric fields. Mark W. Crane and Robert P. Harnack, Rutgers Univ., New Brunswick, N.J.

6.10 Objective specification of monthly mean surface temperatures from 700 mb data. William H. Klein, Univ. of Maryland, College Park, Md.

6.11 Prediction of U.S. summer season climate based on lagged sea surface temperature changes associated with the Southern Oscillation. Paul Handler, Univ. of Illinois, Urbana, Ill.

Wed Jan 12
6:30 pm

Cocktail Reception

Wed Jan 12
7:30 pm

AMS Awards Banquet

Thurs Jan 13
8:30 am

Session 7: Relationships of the Climate System to CO2 and Other Aerosols

Chairperson: Michael C. MacCracken, Lawrence Livermore National Lab., Livermore, Calif.

7.1 The effect of the El Chichon eruption on the Northern Hemisphere climate. Albert Arking, Ming-Dah Chou, and Li Peng, GSFC/NASA, Greenbelt, Md.


7.3 The effects of anthropogenic aerosols on the radiation balance of the Arctic. Thomas P. Ackerman, J. B. Pollack, and J. M. Steinback, Ames Research Center/NASA, Moffett Field, Calif.

7.4 An empirical modeling assessment of volcanic and carbon dioxide effects on global scale temperature. J. Murray Mitchell, Jr., Environmental Data and Information Service (EDIS)/NOAA, Rockville, Md.

7.6 Climatic change and spectral variations in the terrestrial infrared radiation budget. Thomas P. Charlock, NCAR, Boulder, Colo.

7.7 The effect of ambient tropospheric aerosols on a statistical dynamical climate model. G. L. Potter, Lawrence Livermore National Lab., Livermore, Calif.; and R. D. Cess, State Univ. of New York, Stonybrook, N.Y.


7.9 Optimal weighting of data to detect climatic change due to increasing carbon dioxide. Thomas L. Bell, GSFC/NASA, Greenbelt, Md.


7.11 The climatic response to doubled CO₂ simulated by the OSU atmospheric GCM with a coupled swamp ocean. Michael E. Schlesinger, Oregon State Univ., Corvallis, Oreg.


Thurs Jan 13
1:30 pm

Session 8: Oceanic and Cryospheric Variation and Relationships to Atmospheric Variation

Chairpersons: Alan D. Robock, Univ. of Maryland, College Park, Md.

8.1 Some year-to-year climatic variations resulting from wind-caused abnormal velocities of the North Pacific gyres. Jerome Namias, Scripps Institution of Oceanography, La Jolla, Calif.


8.3 The sea ice/thermal inertia feedback: Determinant of the latitudinal and seasonal distribution of climate sensitivity. Alan D. Robock, Univ. of Maryland, College Park, Md.


8.5 Cryosphere-cloud relationships near the sea ice margin. R. G. Crane and Roger G. Barry, CIRES/Univ. of Colorado, Boulder, Colo.

8.6 Northern Hemisphere snow cover and interannual atmospheric variability. John E. Walsh, Univ. of Illinois, Urbana, Ill.

8.7 Large-scale ocean-atmospheric couplings in the North Pacific. Joel C. Michaelsen, Univ. of California, Santa Barbara, Calif.

8.8 The reality of global sea level changes and their possible causes. Tim P. Barnett, Scripps Institution of Oceanography, La Jolla, Calif.

Fri Jan 14
8:30 am

Session 9: Paleoclimate Reconstructions: Diagnostics and Modeling


9.5 The sensitivity of monsoon climates to orbital parameter changes for 9000 years B.P.: Experiments with a general circulation model. John E. Kutzbach and P. Guetter, Univ. of Wisconsin, Madison, Wis.


Fri Jan 14
8:30 am

Session 10: Climate Models—I

Co-Chairpersons: Bette L. Otto-Bliesner and Robert G. Gillimore, Univ. of Wisconsin, Madison, Wis.

10.1 On the verification of numerical experiments to simulate January climate. Hans von Storch, Meteorologisches Institut der Univ. Hamburg, F.R.G.

10.2 The response of a simulated January climate to changed surface boundary conditions. Erich Roeckner, Meteorologisches Institut der Univ. Hamburg, F.R.G.

10.3 The sensitivity of the climate of a general circulation model to seasonal external forcing. Bette L. Otto-Bliesner and David D. Houghton, Univ. of Wisconsin, Madison, Wis.

10.4 Solar constant sensitivity of a seasonal energy balance model with latitude-dependent diffusivity. Russell A. Gaj and Max J. Suarez, Univ. of California, Los Angeles, Calif.

10.5 An analysis of the vertical and meridional propagation of stationary and low-frequency planetary waves in several simulations of the GLAS climate model. David M. Straus and Jagadish Shukla, GSFC/NASA, Greenbelt, Md.

10.6 The climate and variability of the CCC general circulation model. George J. Boer, Norman A. McFarlane, and R. Laprise, Canadian Climate Centre, Downsview, Ont., Canada.

10.7 The sensitivity of a zonal mean water vapor-energy balance model to feedback interactions associated with the hydrologic cycle, lapse rate, and albedo-transport mechanism. Robert G. Gillimore, Univ. of Wisconsin, Madison, Wis.

10.8 Forced, stationary waves in a linear mid-latitude model. John O. Roads, Scripps Institution of Oceanography, La Jolla, Calif.

10.9 The influence of the stratosphere on the troposphere as deduced from a general circulation model. Byron A. Boville, NCAR, Boulder, Colo.

10.10 Modelling the seasonal transport properties at atmospheric eddies. Karl E. Taylor, Univ. of Florida, Gainesville, Fla.

10.11 Sensitivity of the symmetric circulation to changes in the observed eddy forcing. B. N. Goswami, GSFC/NASA, Greenbelt, Md.


Fri Jan 14
1:30 pm

Session 11: Climate Models—II

Chairperson: Stanley L. Thompson, NCAR, Boulder, Colo.

11.1 Parameterization of meridional heat flux divergence in a one-dimensional climate model. Charles A. Lin, Univ. of Toronto, Ont., Canada.

11.2 Geographical distribution of albedos produced by a general circulation model (GCM) with internally generated cloud optics. Thomas P. Charlock and V. Ramanathan, NCAR, Boulder, Colo.


11.4 A general circulation model simulation of winter climate anomaly patterns associated with equatorial Pacific sea surface temperatures. Maurice L. Blackmon, NCAR, Boulder, Colo.; Eric J. Ritcher, Univ. of Miami, Fla.; and John E. Geisler, Univ. of Utah, Salt Lake City, Utah.
THE THERMAL THEORY OF CYCLONES
A History of Meteorological Thought in the Nineteenth Century

by Gisela Kutzbach

This new monograph represents a quantum jump in the level of historical analysis in meteorology. It is a history that, at last, gives a sense of real people, much like investigators today and no less competent, struggling to develop a data base and a set of concepts rich enough to treat some of the most vexing problems in all science. Chapter topics include:

- Early Applications of the Principles of Adiabatic Change and Vertical Convection
- Early Applications of the First Law of Thermodynamics
- Emergence of the Thermal Theory of Cyclones
- The Thermal Theory Put to Observational Test
- Modifications of the Thermal Theory
- Toward the Wave or Polar Front Theory of Cyclones

256 pages $25 AMS Members
Hard Cover $35 Nonmembers

(add $2.00 postage/handling)

Send order and remittance to:

AMERICAN METEOROLOGICAL SOCIETY
45 BEACON ST., BOSTON, MASS. 02108

HISTORICAL MONOGRAPH SERIES

AMERICAN METEOROLOGICAL SOCIETY
INSTRUMENTS AND TECHNIQUES FOR PROBING THE ATMOSPHERIC BOUNDARY LAYER

Sponsored by the
AMERICAN METEOROLOGICAL SOCIETY

DATES: August 8-12, 1983
PLACE: Hilton Harvest House Hotel
        Boulder, Colorado
FEE: $450

Organizing Committee

Dr. Donald H. Lenschow, NCAR, Chairman
Dr. J. Chandran Kaimal, Wave Propagation Lab./NOAA
Dr. Walter F. Dabberdt, SRI International
Mr. Alvin L. Morris, Ambient Analysis, Inc.

TENTATIVE COURSE OUTLINE

I. Observational Strategies (J. Wyngaard, NCAR)
   A. Representativeness of Measurements
   B. Temporal and Spatial Sampling Requirements

II. In Situ Measurements
   A. Flux and Profile Measurements from Towers in the Boundary Layer
      (J. Kaimal, WPL/NOAA)
   B. High-Frequency Velocity, Temperature and Humidity Measurements
      Over Land and Sea Surfaces (C. Friehe, Univ. of California, Irvine)
   C. Aircraft Measurements in the Boundary Layer (D. Lenschow, NCAR)
   D. Aerosol Measurements in the Boundary Layer (R. Pueschel, NOAA)
   E. Gaseous Tracer Technology and Application (W. Dabberdt, SRI International)

III. Remote Sensing Techniques
   A. Lidar Measurement of Boundary Layer Variables (R. Schwiesow, NOAA)
   B. Remote Sensing with Radar (R. Chadwick and R. Kropfli, NOAA)
   C. Acoustic Remote Sensing (W. Neff, NOAA; and R. Coulter, Argonne National Lab.)
   D. Visibility Measurement Techniques (W. Viezee, SRI International)

See details in "Meetings Section".

American Meteorological Society, 45 Beacon St., Boston, Mass. 02108
The Second Joint Conference on Applications of Air Pollution Meteorology, sponsored by the American Meteorological Society and cosponsored by the Air Pollution Control Association, was held 24–27 March 1980 in New Orleans, La. The Second Conference on Industrial Meteorology, sponsored by the American Meteorological Society, followed on 28 March 1980 also in New Orleans, La.

This volume of conference papers contains over 125 papers on air pollution meteorology and a transcript of a panel discussion on “The Proper Use of Air Pollution Meteorology in the Regulatory Process,” as well as 14 papers on industrial meteorology. Papers are arranged under the following session topics:

**Air Pollution Meteorology**
- Special Sources
- Photochemical Models
- Plume Rise Studies and Field Experiments
- Long-Range Transport and Transformation
- Visibility and Acid Precipitation
- New and Improved Mathematical Representation
- Complex Terrain
- Validation of Short-Term Models
- Regulatory Issues
- Optimizing Applications and Estimating Boundary Conditions

**Industrial Meteorology**
- The Work of Industrial Meteorologists
- Industrial Meteorologists at Work
- Professional Issues
- More Industrial Meteorologists at Work

870 pages

$22 AMS Members
$32 Nonmembers
(add $2.00 postage/handling)

**Send order and remittance to:**

American Meteorological Society
45 Beacon St., Boston, Mass. 02108