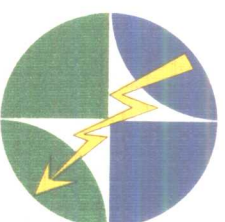


FIFTH INTERNATIONAL CONFERENCE ON ATMOSPHERIC ELECTRICITY

Garmisch-Partenkirchen 2...7 September 1974



Place and Time:

Municipal Conference Hall ("Konzertsaal")
Garmisch-Partenkirchen, Bavaria,
Fed. Rep. of Germany

Monday 2 September through
Saturday 7 September 1974

CONFERENCE CHAIRMAN:

REINHOLD REITER

Conference Office:

Conference on Atmospheric Electricity
Kreuzeckbahnstr. 19
D-8100 Garmisch-Partenkirchen, West Germany
Telephone: 08821 - 51507

SPONSOR:

INTERNATIONAL COMMISSION ON ATMOSPHERIC ELECTRICITY
OF THE INTERNATIONAL ASSOCIATION OF METEOROLOGY AND ATMOSPHERIC PHYSICS
IN THE UNION GÉODÉSIQUE ET GÉOPHYSIQUE INTERNATIONALE
INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

CO-SPONSOR: WORLD METEOROLOGICAL ORGANIZATION

HOST: FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG

(FRAUNHOFER - SOCIETY FOR APPLIED RESEARCH)

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HOST:

FRAUNHOFER-~~RESEARCH~~SCHAFST ZUR ~~BORDERUNG~~ DER
ANGEWANDTEN ~~FORSCHUNG~~ ~~AN~~
(FRAUNHOFER - SOCIETY FOR APPLIED RESEARCH)

EXECUTIVE PANEL: L. Koenigsfeld / Belgium, Chairman
R.D. Bojkov / WMO
H. Dolezalek / USA
R. Reiter / Fed. Rep. Germany

ADVISORY BOARD : O. Mohr / Fed. Rep. Germany, President

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V.P. Kolokolov / USSR	R. Reiter / Fed. Rep. Germany

I N D E X :	Scientific and Business Program:	pages 5...29
	Post-Conference Excursions	: pages 30...33
	Ladies' Cultural Program	: pages 34 and 35

R E M A R K S

- I The times given for individual papers include the discussion time of 5 minutes.
- II Time indicated as ++++ denotes a paper which is scheduled for presentation by title only. In case a paper is withdrawn or an author fails to present his paper, the Session Chairman may decide to have one of the ++++ papers presented in its place.
- III Papers and discussions will be magnetically taped and immediately transcribed. Past experience has shown that such transcribed version is completely unfit for printing. Therefore, it is requested that the colleague who partook in the discussion should do the first editing himself. If he has clearly stated his name, he will find the transcription one-half day later in the "pigeon hole" bearing his name. If he has not, there will be no transcription. He is expected to pick up the transcription, do the necessary editing and correcting, and to return, during the course of the same day, the corrected transcription to the pigeon hole of the chairman in whose session he participated. If this procedure is not followed, the chairman will not be able to edit his own full session and the speaker's remarks will not be retained.
- IV A list of participants will be distributed prior to the conclusion of the Conference.
- V Quick luncheons and dinners are available in the Kurpark Cafe (entrance through lobby of Conference hall).

- A While in the Conference building, you can be contacted by telephone under: Area code (local code) 08821, exchange 4823, 57037 and 57085, Monday through Friday from 0800 - 1800 and on Saturday from 0800 - 1200.
You can make local and long distance telephone calls with the assistance of employees of the temporary post office in the Conference building from Monday through Friday 0800 - 1800 and on Saturday 0800 - 1200.
- B You can obtain travel information, purchase railroad and airline tickets, etc., and have your return flight confirmed at the counter of the Amtliches Bayerisches Reisebüro in the Conference building from Monday through Saturday. Hours of operation will be posted on window. This travel bureau is also responsible for the organization of the Ladies' Cultural Program and of the Post-conference excursions.
- C You can change travelers' checks and foreign money into German money and vice versa in the temporary office of the Bayerische Hypotheken-und Wechsel Bank located in the Conference building on Sunday through Friday. Hours of operation will be posted on window.
- D You can turn in your slides at the appropriate desk in the lobby of the Conference building daily starting on Monday from 0800 - 1230 and from 1330 - 1700. Pick up at same location.
- E Provision will be made for assistance in mailing of letters and parcels.

P R E - C O N F E R E N C E M E E T I N G S

Saturday, 31 August and Sunday, 1 September 1974

Available for discussion meetings of the
Working Groups of the Mid-Range Plan Effort
Place: Kurhaus, 2 minutes from Conference
Hall in the Kurpark

Sunday, 1 September 1974 2000 Meeting of the Session Chairmen
in the Conference Hall

Monday, 2 September 1974

0830 - 0900

Opening of the Conference

Chairman: L. Koenigsfeld, President, International Commission on Atmospheric Electricity

0830 - 0832 L. Koenigsfeld, President, International Commission on Atmospheric Electricity

0832 - 0836 O. Mohr, President, Fraunhofer-Gesellschaft

0837 - 0841 G. Lehr, Ministry for Research and Technology of the Federal Republic of Germany

0842 - 0846 M. Streibl, Minister, Ministry for Environmental Affairs of the State of Bavaria

0847 - 0851 R.D. Bojkov, World Meteorological Organization

0852 - 0856 H. Dolezalek, International Commission on Atmospheric Electricity

0856 - 0857 L. Koenigsfeld Introduces Conference Chairman

0857 - 0900 R. Reiter, Conference Chairman

Monday, 2 September

0900 - 1245

S E S S I O N 1 Chairman: G.A. Dawson

Ions, Basic Research

- | | | | |
|---|-------------|--|--|
| 1 | 0900 - 0930 | Mohnen, V.A. | Formation, Nature and Mobility of Ions of Atmospheric Importance (invited) |
| 2 | 0930 - 0945 | Thomson, B.A. and Iribarne, J.V. | Positive and Negative Ion Mobility Spectra of Spray-Produced Ions |
| 3 | 0945 - 1000 | Castleman, Jr., A.W. and Tang, I.N. | On the Molecular Properties of Atmospheric Ion Clusters and their Relationship to Nucleation |
| 4 | 1000 - 1015 | Cabane, M., Madelaine, G., Bricard, J. and Krien, P. | Mobility Spectrum of Ions Created in Gases at Atmospheric Pressure |
| 5 | 1015 - 1030 | Kojima, H. and Sekikawa, T. | An Experimental Method for Determining the Charged Fraction on Aerosols |

1030 - 1045

Coffee Break

Monday, 2 September

S E S S I O N 1 (continued)

1245 - 1400

6	1045 - 1100	Huertas, Marie-Louise and Fontan, J.	Evolution of Tropospheric Ions
7	1100 - 1115	McKnight, L.G. Gray, E.W.	Identity and Interactions of Atmospheric Ions with Organic Contaminants
8	1115 - 1130	Wilkening, M.H.	Influence of the Electric Fields of Thunderstorms on ²²² Rn Daughter Ion Concentrations
9	1130 - 1145	Hoppel, W.A.	Ion-Aerosol Attachment Coefficients and the Diffusional Charging of Aerosols
10	1145 - 1200	Krasnogorskaya, N.V. and Nelzvestniy, A.J.	On the Velocity of Coagulation Growth of Charged Cloud Droplets
11	+++++	Vohra, K.G.	No title (Lab. Exper. on Atmospheric Nucleation)
12	+++++	Wiendl, Elisabeth	Structure of Liquid H ₂ SO ₄ - H ₂ O Clusters Around Ions: Thermodynamic Theory
	1200 - 1245	General Discussion	

Lunch Break

Monday, 2 September

S E S S I O N 2 Chairman: R. Reiter

1400 - 1745

Ions, Applied Research; Atmospheric
Electricity and Meteorology=====

1 1400 - 1430 Anderson, R.V.

Atmospheric Electricity in the
Real World (invited)

2 1430 - 1445 Bhartendu

Relationship of the Ohm's Law
Electrical Parameters with
Meteorological Elements

3 1445 - 1500 Manes, A.

The Atmospheric-Electric Climate
at the Greater Tel-Aviv Area
(Israel) and its Correlation to
the Particulate Air Pollution

4 1500 - 1515 Misaki, M., Ikegami, M.
and Kanazawa, I.

Deformation of the Size Distri-
bution of Aerosol Particles
with the Dispersion from Land
to Ocean

5 1515 - 1530 Morita, Y. and
Ishikawa, H.

On the Recent Measurements of
the Electric Parameters and
Aerosols in the Oceanic Atmos-
phere

6 1530 - 1545 Pourprix, M.,
Madelaine, G., Brock,
J.R. and Bricard, J.

Space Charge Distribution near
a Particle Beam

Monday, 2 September S E S S I O N 2 (continued)

	1545 - 1600	Coffee Break	
7	1600 - 1615	Tsunoda, Y. and Satsutani, T.	Observation of Atmospheric Ions and Atmospheric Phenomena in Kobe Area
8	1615 - 1630	Lane-Smith, D.R. and Markson, R.	Atmospheric Electric Measurements during the 1972 Eclipse over Nova Scotia
9	1630 - 1645	Morachevsky, V.G. and Dubrovich, N.A.	The Unusual Conditions of the Charging of the Aerosol Particles of the Industrial Origin
10	1645 - 1700	Chubarina, E.V., Imyanitov, I.M. Pavlyuchenkov, G.F. and Shvarts, Ya.M.	Electric Characteristics of the Atmosphere over the Arctic
	+++++	Cobb, W.E.	Atmospheric Electric Measurements at the South Pole
	+++++	Kamra, A.K.	Effect of Dust-Raising Winds on Atmospheric Electric Field
	1700 - 1745	General Discussion	
1930		Business Meetings of individual Sub-Commissions of ICAG	
		Place: Kurhaus, 2 min. from Conf. Hall in the Kurpark	

Tuesday, 3 September

0830 - 1200

S E S S I O N 3, Chairman: L. Saxer

Principles and Problems of Instrumentation,
Methods of Calibration, Data Handling

- | | | | |
|---|-------------|--|---|
| 1 | 0830 - 0900 | Lane-Smith, D.R. | Review of Instrumentation for Atmospheric Electricity (invited) |
| 2 | 0900 - 0915 | Mochizuki, S. and Sekikawa, T. | A Technique for Continuous Recording of the Total Rate of Ion Formation in the Atmosphere |
| 3 | 0915 - 0930 | Itagaki, K. | Electric Charge Transfer Due to Drifting Snow |
| 4 | 0930 - 0945 | Bhartendu | Variation of Omega at Two Land Stations |
| 5 | 0945 - 1000 | Dayaratna, L.H. and Hutchinson, W.C.A. | Atmospheric Electrical Mechanical Transfer Currents to Plate Antennas |
| | 1000 - 1015 | Coffee Break | |
| 6 | 1015 - 1030 | Christian, H.J. and Few, A.A. | The Measurement of Atmospheric Electric Fields Using a Newly Developed Balloon Borne Sensor |

Tuesday, 3 September S E S S I O N 3 (continued)

7 1030 - 1045 Hill, M.L. and
Hoppel, W.A.

Effects of Velocity and other
Physical Variables on the Cur-
rents and Potentials Generated
by Radioactive Collectors in
Electric Field Measurements

8 1045 - 1100 Grigoriu, A.

Method for Eliminating the Non-
controllable Influence of the
Potential Equalizer Inertia
During the Aeroelectric Field
Measurements

9 1100 - 1115 Braginskaya, L.L.
and Shvarts, Ya.M.

Investigation of the Temporal
Structure of Electric Field
Intensity near the Earth's Sur-
face in Application to the Task
of Mean Values Determination

10 +++++ Nakatani, S.

Direct Determination of the In-
dividual Concentrations of Ra-
don Daughter Products in the
Atmosphere by means of Delayed
Coincidence Technique

1115 - 1200 General Discussion

Tuesday, 3 September

1200 - 1315

S P E C I A L S E S S I O N , Chairman: R.D. Bojkov

Draft of Technical Note for the World Meteorological Organization on the Application of Atmospheric Electricity Concepts and Methods to Other Parts of Meteorology, prepared by the Working Group on Atmospheric Electricity of the Commission of Atmospheric Sciences of the World Meteorological Organization.

E. Magaziner: Film on Electric Field under Thunderstorms

1315 - 1430

Lunch Break

1430 - 1930

V I S I T O W I E S C H U R C H A N D B A R O Q U E

C O N C E R T

1430

Departure by busses from Conference Building to the "Wies" Church (Steingaden) - Bavarian Rococo, built 1745-1757 by Dominikus Zimmermann - with historical explanation and a specially arranged Baroque concert (1600 to 1800 hours) presented by the Münchner Kammerorchester with works by Bonporti, Vivaldi, Händel and Bach.

1830

Departure by busses, return to Garmisch - Partenkirchen

2045

Business Meeting for the Members of the International Commission on Atmospheric Electricity (on invitation, without Sub-Commissions)

Wednesday, 4 September

0830 - 1215

SESSION 4, Chairman: L.H. Ruhnke

Cloud Physics, Non-Convective Clouds and Precipitation

1	0830 - 0900	Latham, J.	Some Electrical Effects in Clouds (Invited)
2	0900 - 0915	Takahashi, T.	Study of Warm Cloud Electricity
3	0915 - 0930	Beesley, G., Illingworth, A.J., Latham, J.	Electrification Measurements from a Drop-Sonde and their Interpretation
4	0930 - 0945	Perret, R.F.D.	On the Convective Electrifica- tion of Warm Stratified Clouds
5	0945 - 1000	Smith, M.H.	The Influence of Electric For- ces upon Droplet Collection Efficiencies
6	1000 - 1015	Aufdermaur, A.N. and Buser, O.	Electrification by Collisions of Ice Particles on Ice or Metal Targets
	1015 - 1030		Coffee Break

Wednesday, 4 September S E S S I O N 4 (Continued)

7	1030 - 1045	Martin, P.F. and Hutchinson, W.C.A.	Melting Electrification of Single Ice Particles in Simulated Free Fall
8	1045 - 1100	Saunders, C.F.R.	The Aggregation and Fragmenta- tion of Ice Crystals
9	1100 - 1115	Shvarts, Ya.M. and Sumin, Yu.P.	Electric Fields in the Vicinity of Clouds
10	1115 - 1130	Kikuchi, K.	Charging Mechanisms of Snow- flakes and Graupels
11	+++++	Wagner, P.B. and Telford, J.W.	Airborne Measurements of Elec- tric Charging of Marine Fog
	1130 - 1215	General Discussion	
	1215 - 1400	Lunch Break	

Wednesday, 4 September

1400 - 1745

S E S S I O N 5, Chairman: A. Aufdermaur

Thunderstorms and Showers

- | | | | |
|---|-------------|---|---|
| 1 | 1400 - 1430 | Moore, C.B. | An Assessment of the Charging Mechanism (invited) |
| 2 | 1430 - 1445 | Katchurin, L.G.
Karmov, M. and
Medalyiev, Ch. | Radio Emission of Convective Clouds in Various Stages of Development |
| 3 | 1445 - 1500 | Rust, W.D. and
Moore, C.B. | Electrical Conditions near the Bases of Thunderclouds in the Southwestern United States |
| 4 | 1500 - 1515 | Ryder, P. and
Stromberg, I.M. | An Experimental and Theoretical Study of the Effect of Eddy Diffusion on Atmospheric Electric Parameters Above and Below an Inversion |
| 5 | 1515 - 1530 | Fitzgerald, D.R. | Electrical Structure of Large Overwater Shower Clouds |
| | 1530 - 1545 | Coffee Break | |