INFORMATIONS

Secretariat

IXth. GENERAL ASSEMBLY

Copies of the programme of the Meeting have been forwarded to the National Committees. Members wanting to receive copies may apply to their Committee.

SUBSCRIPTION

We remind the National Committees that the subscription for 1950 was fixed by the 1948 General Assembly at the rate of 450 gold francs per statutary unit.

ITALY

We are informed of the constitution at the Napoli University of the « Centro Studi sulla Radiopropagazione e Radionavigazione » (Study Center for Radiopropagation and Radionavigation).

One of the activities of the Center consists in organizing lectures for engineers on the following topics:
Spatial and terrestrial propagation;
Ionospheric propagation;
Radionavigation methods;
Radionavigation equipments;
Pulse circuits, etc.

EUROPEAN BROADCASTING UNION

For the personal informations of our readers it seems useful to publish the introduction of the first « Documentation and Information Bulletin » of the European Broadcasting Union.
«Today is published the first issue of the Bulletin of the European Broadcasting Union. Founded in February 1950 at Torquay, the Union has rapidly become an organised and effective international body, and the present publication bears witness to the fact. The Administrative Office has been established in Geneva, and the Technical Centre of the Union has a most active existence at Brussels. The coming into force of the Copenhagen Plan on March 15th. provided very early in its career a test for the Technical Centre, and gave it the chance to demonstrate its effectiveness. Everything points to the conclusion that the European Broadcasting Union has a useful future before it, and that it is ready to play its part in furthering collaboration among Broadcasting Organisations in the European Area and throughout the world.

As the first President of the Union I have great pleasure in introducing our Bulletin to its readers, and in wishing it every success. I feel confident that our Members will support the Union by every means in their power, and will help it to be useful in all matters of interest to broadcasting. There are many international bodies in existence nowadays, but few which have to work in a field where friendly collaboration is more necessary if development is to proceed unchecked. I have no hesitation in affirming that this friendly collaboration will be the hallmark of the European Broadcasting Union not only in its domestic affairs but in its relations with other bodies.»

«I am Jacob.»

INTERNATIONAL UNION OF PURE AND APPLIED PHYSICS

Papers submitted to the colloquium on Cosmic Rays

Côme, 11-16 September 1949

E. Fermi (Chicago) : Ipotesi sull’ origine dei raggi cosmici.
E. Bagge (Hamburg) : Die Sonne und die Fixsterne als Quellen kosmischer Strahlung.
F. Bopp (München) : Der Spin der Elementarteilchen als Folge von Emissions-Reabsorption prozessen.

J. Clay (Amsterdam) : Solar flares and excesses of cosmic radiation.

J. H. Davies, W. O. Lock and H. Muirhead (Bristol) : Energy of particles from the decay of mesons.

Miss Dilworth (Bruxelles) and Miss Page (Manchester) Electrons accompanying the decay and capture of mesons.

C. Franzinetti (Bristol), S. Rosenblum (Paris) : On the Spectrum of Light Particles produced in Cosmic Ray Disintegrations.

J. Clay (Amsterdam) : The complex of radiation of extensive showers.

E. Amaldi, C. Castagnoli, A. Gigli, S. Sciuti (Roma) : Contributo allo studio degli sciami estesi dell' aria.

A. Borsellino (Milano) : Sullo sparpagliamento angolare e laterale degli elettroni in uno sciamè.

J. Daudin (Observatoire du Pic du Midi, Pyrénées) : Clichés Wilson, compositore électronique et gerbes nucléaires.

A. L. Hodson et A. Loria (Manchester) : Control of a Wilson cloud chamber by means of an internal counter.

R. Maze (Paris) : Sur le pouvoir pénétrant des gerbes de l’air.

C. Milone, S. Tamburino, G. Villari (Catania) : Sulla distribuzione delle particelle penetranti negli sciami estesi dei raggi cosmici.

G. Moliere (Hechingen-Hohenzollern) : Merfache und vielfache Coulomb-Streuung.

C. F. Powell (Bristol) : Nuclear transmutation produced by cosmic ray particles of great energy.

L. Leprince-Ringuet (Paris) : Phénomènes nucléaires de très grande énergie dans le rayonnement cosmique.

M. G. E. Cosyns (Bruxelles) : Stars with Showers of relativistic Particles.

B. Ferretti (Roma) : Sulla componente della radiazione penetrante generatrice di stelle.

M. Morand (Paris) : Etude de la dissymétrie Est-Ouest mise en évidence sur les traces isolées produites dans les émulsions nucléaires par les rayons cosmiques.

a) Recherches et données préliminaires.

b) (in co-operation with L. Winand, C. Beets, H. Moucha-Rafyeh, M. Jannot, L. van Rossum, Mme Alleno) : Résultats expérimentaux.
c) (in co-operation with L. van Rossum, C. Beets et M. Jannot) : Essai de détermination des masses des particules sur lesquelles a été observée la dissymétrie Est-Ouest.

L. van Rossum, P. Cuér, M. Morand (Paris) : Etude comparative des évaporations nucléaires, produites dans les émulsions sensibles, par particules, deutérons, neutrons, mésons et rayons cosmiques.

G. Occhialini (Bruxelles) : One Year of Electron Sensitive Plates : Problems and Results.

M. M. Addario et S. Tamburino (Catania) : I. Nuclei pesanti della radiazione cosmica primaria osservati in lastre fotografiche esposte fino a 29000 m di altezza.  
 II. Disintegrazioni nucleari prodotte dalla radiazione cosmica a 29000 m di altezza.

G. Bernardini, G. Cortini, A. Manfredini (Roma) : Sulle stelle di nucleoni provocate dai raggi cosmici.

Miss Dilworth (Bruxelles), Miss Vermaesen (Ghent) : Processing of Nuclear Research Plates of great thickness and their applications to Cosmic Rays.

V. Goldschmidt (Bruxelles), M. Merlino (Padova) : Sandwich di lastre fotografiche in campo magnetico.


Miss N. Page and G. D. Rochester (Manchester) : Some observations on the nuclear disintegrations caused by Cosmic Rays in Photographic Emulsions.


M. Schein (Chicago) : On the production of Nucleons and Mesons in the Cosmic Radiations.

P. M. S. Blackett (Manchester) : Cloud chamber studies of penetrating showers.


A. Borsellino, G. Salvini (Milano) : Sulla struttura degli sciami estesi dell’ aria.
M. Conversi (Chicago): Altitude and Latitude Dependence of Penetrating Particles slowed down after traversing 15 cm of Lead.

J. Daudin (Paris): Deux montages de compteurs pour l'étude des gerbes nucléaires.

M. Degallier (Lausanne): Apparatus for the Study of the Production and Scattering of Ionizing Penetrating Particles Generated by the Non-ionizing Radiation.


P. Caldirola (Pavia): Sulla generazione e sull' eccesso positivo della componente mesonica.


W. Heitler and L. Janossy (Dublin): Absorption of meson producing nucleons.

J. G. Wilson (Manchester): The relative numbers of positive and negative mesons at sea level.

L. Janossy (Dublin): Penetrating particles in air showers.

A. Freon-Tsai-Chu (Paris): Sur la loi empirique de répartition angulaire de la composante pénétrante dans la base atmosphère.


W. Heitler and L. Janossy (Dublin): The multiplicities of meson showers.


B. Bernardini (Roma): Relazione conclusiva dei lavori.

Those papers will be published in a special issue of Nuovo Cimento.
NATIONAL COMMITTEES

Dutch National Committee

MEMBERSHIP

The Dutch National Committee of the U.R.S.I. is constituted as follows:

President: Prof. Ir. B. D. H. Tellegen, Tongelresestraat, 193, Eindhoven.


Dr. C. J. Bouwkamp, Goorstraat, 10, Eindhoven.
Dr. H. Bremmer, Markt, 35, Eindhoven.
Ir. B. van Dijl, Prins Willem van Oranjelaan, 25, Naarden.
Dr. H. J. Groenewold, Utrechtseweg, 324, de Bilt.
Drs. A. Hauer, Biltsestraatweg, 57, de Bilt.
Dr. Ir. J. L. H. Jonker, Broerelaan, 12, Eindhoven.
Prof. Dr. M. G. J. Minnaert, Zonnenburg, 2, Utrecht.
Prof. Dr. J. H. Oort, Sterrewacht, 5, Leiden.
Ir. J. Piket, Jongeneelstraat, 11, Scheveningen.
Prof. Dr. B. van der Pol, Chemin Krieg, 22, Geneva (Switzerland).
Dr. J. F. Schouten Fazantlaan, 11, Eindhoven.
Prof. Dr. Ir. J. P. Schouten, Roelofsstraat, 4, The Hague.
Ir. A. H. de Vooigt, Scheveningseweg, 6, The Hague.
Jhr. Dr. Ir. G. Th. F. van der Wijck, van Stolkweg, 1a, The Hague.

U. S. A. National Committee

CONSTITUTION OF THE COMMITTEE

As amended by the Committee on May 2, 1949, and approved by the Executive Board of the National Research Council on May, 24, 1949.
1. The U.S.A. National Committee shall consist of the Chairman of the Division of Mathematical and Physical Sciences of the National Research Council (ex officio); one representative each of the U.S. Department of Commerce, the Federal Communications Commission, and the Institute of Radio Engineers; two representatives of the U.S. Department of the Army, one of whom shall be the Chief Signal Officer (ex officio); two representatives of the U.S. Department of the Navy, one of whom shall be the Chief, Naval Communications (ex officio); two representatives of the U.S. Department of the Air Force, one of whom shall be the Director of Communications (ex officio); officers and Commission chairmen of the International Scientific Radio Union resident in the United States (ex officio); the chairman of the National Commissions (ex officio); officers until expiration of their terms of office; the junior past chairman; and members-at-large.

2. The representatives (other than ex officio representatives) of the several organizations shall be nominated by those organizations, and the members-at-large shall be nominated by the U.S.A. National Committee. The nominations shall be acted upon, and the appointments made, by the National Research Council.

3. The officers of the U.S.A. National Committee shall be a chairman, a vice-chairman, a secretary, and a treasurer. These officers, and honorary members and subcommittees and other auxiliary bodies, shall be elected by the Committee.

4. Officers shall serve for terms from the spring meeting after each General Assembly of the Union to the spring meeting after the next General Assembly. Members-at-large shall serve for terms of four years. Officers and members-at-large shall not be eligible for immediate reelection.

5. The duties of the U.S.A. National Committee shall be: (a) to promote the objectives of the Union; (b) in consultation with the chairman of the Division of International Relations of the National Research Council, to nominate a representative of the National Committee in that Division; (c) to nominate delegates to the meetings of the Union; (d) to arrange for meetings in the U.S.A. in consonance with the objectives of the Union; (e) to deal with scientific radio questions in general involving the participation of the United States.
RESULTS OBTAINED IN 1948. — The reports and the discussions made at the committee meetings held each month were published in Numbers 3, 4 and 5 of the « Reports of the Synthetic Study of the Co-operative Observations ». The abstracts of the lectures and the research results reported at the colloquia held each month are published in Numbers 1 and 2 of the « Proceedings of Colloquia ». When the results of research are reported in their final form, they are published in « Essays on Ionosphere Research ».

The main results contained in such publications during 1948, concern:

1. Improvement and Extension of Observations.
   1.2. Geomagnetic Observations: During the solar eclipse, observations were carried out at several temporary stations. The observed elements of the variability of magnetic field were increased.
   1.3. Ionospheric Observations: A precise measurement was made with a special apparatus during the eclipse.
1.4. Record of Electric Field Intensity: Electric field intensity measurement of radio-waves from England was transferred from Ohira to Hiraiso.

1.5. Preparation for the Measurement of Solar Noises: Equipments are now in preparation for measuring solar noises at the Oi Laboratory of the Ministry of Communication and the Tokyo Astronomical Observatory.

1.6. Cosmic Ray Observation: The observation by the Nagoya University has begun.

1.7. Night Light Observation.

2. Development of Research and New Discoveries.


2.2. Provisional Study with Coronagraph.

2.3. Spectroscopic Study of the Sun.

2.4. Variation of Ionosphere accompanied with Geomagnetic Variation.

2.5. Electromagnetic Induction in Ionosphere: Effects on the geomagnetic field of the induction current produced in ionosphere due to the variation of external magnetic field (Nagata, Sugiura).

2.6. Composition and Development of Geomagnetic Storms.

2.7. Ionospheric Storms: Statistical study on the ionospheric storms were made and their characteristics are now in search for (Nagata, Fukushima).

2.8. Analysis of Diurnal Variation of Geomagnetic Field: The fact that the vertical component of diurnal variation is bigger in the external geomagnetic field was pointed out (Rikitake).

2.9. Discussion of Diurnal Variation in the Polar Region: That the electric conductivity of the upper atmosphere has a special distribution in the region was studied (Hasegawa).

2.10. Activity of the Geomagnetic Sq Field.

2.11. Relation between Telecommunication and the worldwide Distribution of Geomagnetic Disturbances: By comparing the world-wide distribution of K-index in the radio fade-out for short wave radio communications the circumstance that the communication condition is generally worse when K-index is larger world-wide (Imamichi).
2.12. Absorption of Radio-Waves in Ionosphere: By computing the collision cross-section of neutral oxygen atoms for slow electrons it was known that this collision cross-section is not much different from the ordinary cross-section so far as the absorption of radio-waves is concerned (Yonezawa).

2.13. Increase of the Thickness of F2 layer at Night: This phenomenon was explained by considering the diffusion of electrons and the cooling of the atmosphere (Yonezawa).

2.14. Oscillation of Ionosphere: It was found that there exists a period of four hours in the variation of the height of F2 layer (Matsushita).

2.15. Lunar Semi-Diurnal Tide of F2 layer: The $M_n$ of the $Z_m$ of F2 layer was shown to have the amplitude 2-4 km and the phase different by about 180° from the earth surface (Matsushita).

2.16. Southward Movement of Es: It was shown that the Es has a tendency to move southward when it is strong and its speed is about 360 km per hour (Matsushita).

2.17. World-wide Distribution of F2 Layer: The condition of radio-wave propagation was analysed by obtaining the world-wide distribution of the constant and the variable terms for F2 layer (Ueda).

2.18. Effect of Solar Activity on Ionosphere: By discussing statistically the effect of solar activity on ionosphere, important data for the prediction of radio-wave propagation were obtained (Ueda and his collaborators).

2.19. Analysis of the Variation of Electric Field Intensity and the Associated Phenomena: The values of the variation of electric field intensity computed on the basis of the attenuation were shown to agree with the observed values, if plotted on the world map, except for the radio-waves passing through the polar region (Ueda, Obayashi).

2.20. Effect of Eclipse on E and F Layers: That the decrease of electron density of F layer at the time of eclipse is controlled by the solar activity and the local time and that of E layer has the same variation as the variation for morning and evening was known (Ueda).
2.21. Variation of Ionosphere during Eclipse: The appearance of a sub-layer in F region which has different mechanism for electron capture has been recognized (Nakata).

2.22. Diurnal Variation of Geomagnetic Field in F layer: It was shown that the diurnal variation of geomagnetic field in F layer has amplitude $10^2$ times larger than on earth surface and that the phases of the diurnal and the semi-diurnal period variations are of opposite sense (Nakata).

2.23. Effect of Solar Eruptions on $f_{\min}$: The solar eruption are shown to be the cause of the increase of $f_{\min}$ (Aono).

2.24. Relation between the Telecommunication and the Solar Phenomena and the Geomagnetism: It has been discovered that at the time of magnetic storm the propagation due to the anomalous reflection for E layer and the disturbance phenomena of tele-communication moves southward with a speed of about 260 km per hour (Miya, Wada).

2.25. Relation between Electric Field Intensity and Magnetic Disturbance: It was shown that the electric field intensity decreases during about one hour in the case of violent magnetic storm and about 10-30 hours in the case of weak magnetic storm after the main phase of the storm takes place, and that the variation of the direction of the radio receiving is accompanied with and in preceeding the radio-disturbance (Kono).


2.27. Analysis of Electric Field Intensity of GLX.

2.28. Analysis of Anomalous Phenomena of Tele-communication from America and from Europe: The relation between radio propagation anomalies and solar eruptions and solar radiation was discussed (Matsuo).

2.29. Diurnal Variation of Cosmic Rays and Solar Activity: From the fact that the diurnal variation of cosmic rays is in phase with the sunspot relative number and has its maximum in spring and in autumn, a close correlation is expected with geomagnetism (Sekido).

2.30. Diurnal Variation of Cosmic Rays and Magnetic Storms: It is shown that the diurnal variation of cosmic rays increases rapidly with the beginning of a magnetic storm and then decreases (Sekido).
2.31. Time-Relation between Cosmic Ray Variation and Geomagnetic Variation.

2.32. Variation of Night-sky Light Intensity and the Height of the Night-Sky Light Emitting Layer: The height of the emitting layer of night-sky light was shown to vary in accordance with the \( Z_m \) and to be higher or lower than \( Z_m \) according as \( f'F2 \) is larger or smaller than its median value.

2.33. Height and Intensity of Night-Sky Light: The intensity of the night-sky light is shown to have a tendency to increase, the higher is the latitude, and to have a closer correlation with electron density (Shimamura).

2.34. Theoretical Study on Night-sky Light:

**Plan for the Next Year (1949).** — (1) Fundamental Research for the Application to the Prediction of Radio Propagation Anomalies.

2. Observation of Light-Intensity of Corona by a Coronagraph.

3. Observation of Short-Wave Radio Noise from the Sun.

4. Study on the geomagnetic variation and its relation to various phenomena concerning ionosphere.

5. Direct Vision Magnetograph.

6. Improvement of the Accuracy for Ionosphere Observations.


9. Continuous Self-Registering Record of the Field Intensity, Receiving Direction and Incident Angle of Radio-Waves and the Study of the Observational Results.


11. Precise and Simultaneous Observations of Night-Sky Light.

12. Observation of Noises and Atmospheric Electricity.


14. Publication of the Reports of Research Results.
Members of Commission III may be interested in the following letter we received from the Ionosphere Research Committee of Japan:


"Dear Sir,

The Ionosphere Research Committee is attempting to publish Catalogues of Disturbances in Ionosphere and Other Related Phenomena and the present copy is the first number (1). The Committee, belonging now to the Science Council of Japan, was organized in 1946 in accordance to the requests from the technicians and the scientists engaged in related subjects. The members of the Committee are carrying on regular simultaneous co-operative observations continuously during one month in each season of the year. At the moment when an unexpected extraordinary solar phenomenon occurs, the Committee will start extra simultaneous observations for about ten days. The meeting of the Committee is held once a month, and the data obtained are studied and discussed and take up the necessary step for disclosing the nature of the phenomena. The results are published in the "Report of Ionosphere Research in Japan" for distribution. The factors observed simultaneously are as follows:

1. Cosmic Rays;
2. Night Sky Light;
3. Solar Phenomena;
4. Geomagnetism;
5. Earth current;
6. Atmospheric electricity;
7. Ionosphere;
8. Field intensity of radio waves.

The Catalogue of Disturbances, № 1, contains the result of the extra observation made by our Committee during three days from August 2 to August 4, 1949, when a magnetic storm occurred. We hope the Catalogue will be of any value to the collaborators in other countries. We should be glad if you would write any

(1) See p. 33.
criticism and advice on the Catalogue. We should be much obliged, if you would kindly send us a copy of the record of observations made at your laboratory during the same period as in the present Catalogue.

As the list in our hand of the addresses where to send this Catalogue is very incomplete, so it would be much appreciated, if you would let us know the addresses of the organizations in your country.

» Yours truly,

(Sgd) Dr. Yusuke HagiHara,
Chairman of
the Ionosphere Research Committee

Any comments may be sent either to our General Secretariat either to the following address:

Doctor Yusuke HagiHara
Ionosphere Research Committee
Science Council of Japan
Ueno Park, TOKYO, Japan

Commission V

ON EXTRA-TERRESTRIAL RADIO NOISE

Dr. F. D. Martyn sent the following letter to the Members of the Commission:


« Dear Colleague,

» I would be glad if Members of Commission V would now communicate to me any suggestions they may have for major topics of discussion at the Zurich Assembly in September. These may be concerned either with problems of international cooperation or with a particular field in extra-terrestrial radio.

» In the first class of problem some success has already been achieved. Thus in cooperation with the Commission on Radio Astronomy of I.A.U. a scheme is now in operation for the regular publication of solar noise data in the Quarterly Bulletin of Solar Activity. Again, by the kind cooperation of the Radio Astronomy
Project at Cornell University arrangements have been made for the regular publication of up-to-date World Bibliographics of our subject. Attention is also being devoted to the nomenclature and units in use in our subject, a problem which should receive much attention at Zurich. You will soon receive some preliminary notes on this subject; these should be regarded as a basis for discussion and further thought before our Commission meets.

One of our objects should be to keep a world-wide continuous watch on the sun for at least one radio-frequency. This would give valuable statistical and other information, as well as providing a valuable and necessary check on the calibration of equipments in various countries. There are now excellent measurements on 200 Mc/s being made at Cornell University, U.S.A. and at the Commonwealth Observatory, Canberra, Australia. The world chain would be much improved if similar observations were to be made continuously at a site in Europe. I specially invite the attention of Commission members from European countries to this matter.

Very cordially yours.

(Sgd) D. F. MARTYN,
President, Commission V.
URSIGRAMS

France

March 1950

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(1) Owing to the great usefulness of the condensed form of the « Ursigrams » for the speedy research of correlations between the various data (SOL MAG, PIDB, etc.), it has appeared necessary to give here all the phenomena observed during the month were they broadcasted or not. After checking and possible corrections, the published text gives a final summing up of the « Ursigrams » for each month.
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Mois d’avril 1950

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DOCUMENTATION

Periodicals

UNESCO


INTERNATIONAL UNIONS


AUSTRIA

*Ionospheric Measurements*, issued by the Ionospheric Station, Graz University, March and April 1950.

BELGIUM

*Centre de Contrôle des Radiocommunications des Services Mobiles* (C.C.R.M.)


The Ph reports give the results of measurements made at Bruxelles by the C.C.R.M. on Marine and Aviation radiobeacon transmissions on medium frequencies.
Abstract: M. Nicolet. — Prédictions ionosphériques et radiocommunications (Ionospheric Predictions and Radiocommunications).

The determination of the conditions of short wave propagation in the ionosphere is shown in a synthetic manner by questions raised by the application. These questions are illustrated by some precise examples.

A brief study of the ionospheric regions such as they are revealed by soundings introduce the principal factors of the problem: critical frequencies of the various layers, virtual heights, existence of ordinary and extraordinary rays, appearance of the sporadic E layer, existence of ionospheric storms.

The formulas for the passage from the critical frequency to the maximum "reflected" frequency under a certain incidence are then shown, the working hypothesis and the applicable domains of each approximation being explained. Finally, the methods employed in practice for the elaboration of ionospheric charts are indicated.


Contains: «La méthode de H. Labrouste pour la recherche de la période», by L. Couffignal.


FRANCE

Bulletin d’Information du Laboratoire National de Radioélectricité, 4th. year, 1949, n° 10 (measurements and observations of Oct. 1949); n° 11 (Nov. 1949); n° 12 (Dec. 1949).


GREAT-BRITAIN

Radio Atmospheric Noise Measurements, issued by the Radio Division, National Physical Laboratory, Bulletin C, n° 39, April 1950, measurements at Tatsfield, Colombo, Malta, Johannesburg (Febr. 1950).


INDIA

Ionospheric Data, issued by the Ionosphere Laboratory, University College of Science, Calcutta, vol. V, n° 10 (Oct. 1949); n° 11 (Nov. 1949); n° 12 (Dec. 1949).

ITALY

Elettrotecnica, Italian bibliography, Centro di Documentazione Tecnica dell’ Università di Padova, VIII th. Year, n° 15, Jan.-Febr. 1950; n° 16, March-April 1950.

JAPAN


NETHERLANDS

Ionospheric Measurements at de Bilt, Febr., March and April 1950.

NEW ZEALAND

Cosmic Relations Bulletin, issued by the Dominions Physical Laboratory, Carter Observatories, n° 8, Janv. 1950; n° 9, Febr. 1950; n° 10, March 1950.

SWEDEN

Ionospheric Measurements at Kiruna, issued by the Research Laboratory of Electronics, Chalmers University of Technology, Gothenburg, March and April 1950.
UNITED STATES


Articles — Books — Works

UNESCO

Interlingual Scientific and Technical Dictionaries, by J. E. Holmstrom.

INTERNATIONAL UNIONS


AUSTRALIA


BELGIUM

Special Reports on Field Strength of Nautical and Aeronautical Radio Beacons (in French), Centre de Contrôle des Radiocommunications des Services Mobiles.


FRANCE

Propagations par réflexions intermédiaires, by E. Theissen.

Mesures ionosphériques allemandes en Norvège, issued by the Service de Prévision Ionosphérique Militaire.

La stratification Fo et les couches intermédiaires entre les régions E et F de l’ionosphère, by K. Bibl.

Etude de la propagation entre Nouéma et la Terre Adélie, by M. Barre, K. Rawer et E. Argence.

Reports from the Research Laboratory of Electronics (Chalmers University of Technology, Gothenburg).


N° 2. The experimental development of traveling-wave tubes. (Preliminary notes), by J. Sigvard and A. Tomner.


N° 4. On the radiation of sound into a circular tube with an application to resonators, by Uno Ingard.

N° 5. A study of impressive wave formation in the atmosphere, by Dietrich Stranz.

N° 6. Ozonradiosonde, by Dietrich Stranz (in German).

Summary. — The daily weather service requests more and more air reports, thus radio sonds having been designed and completed for this purpose. Most recent investigations during the War suggested to develop an instrument for obtaining measurements of ozone content from the stratosphere up to about 25 km. In order to solve this task it has been tried to design an ozone radio sond which, while ascending and descending in the air, signals to the ground the amount of ultra-violet irradiation upon a photocell representing a measure for ozone content above the reception of radiation. The method of transforming solar radiation into radio signals received at ground and of evaluating the results as to ozone content in air is described in the paper.

The whole work could not be accomplished because of disruption of experiments in spring 1945.


Summary. — Regular recordings of ionospheric effects of solar flares with different kinds of apparatus were started at the Geophysical Obser-
The results of the first half year are presented and analysed in this preliminary communication. The statistical distribution of radiation sources of stronger and weaker fade-outs across the solar disk is shown. The magnitude and probability of the absorption of the ultraviolet fade-out radiation in the solar corpuscular beam is discussed.


No 10. Experimental investigation of a long electron beam in an axial magnetic field, by J. Sigvard and A. Tomner.

No 11. The ionospheric and radio wave propagation observatory at Kiruna, by O.E.H. Rydbeck.

No 12. The panoramic ionosphere recorder, by Rune Lindquist.

Summary. — This article gives a description of a new type of recorder for ionospheric sounding. The recorder covers the frequency spectrum 1 to 20 Mc/s in 30 seconds and is for that reason of great value for investigations in the polar regions, where ionospheric conditions are very fluctuating. The use of a wave band transmitter and receiver has made the short sweep time possible. Only one variable capacitor rotating at low speed is necessary. Automatic tracking between receiver and transmitter is secured through the use of a heterodyne system. Samples of records obtained at Kiruna since the beginning of observations in July 1948 are shown.

No 13. Ionospheric effects of solar flares, by R. Lindquist (Preliminary Reports no 2 and 3).