

## FOREWORD

After its previous Workshops in Edinburgh (1972), Ottawa (1974), Sopron (1976), and Murnau (1978) the IAGA Working Group I-3, Electromagnetic Induction and Electrical Conductivity (Earth and Moon) held its Fifth Workshop at the Department of Geophysics, University of Istanbul from August 17 to 24, 1980. The Workshop was co-sponsored by the International Union of Geodesy and Geophysics (IUGG), the International Association of Geomagnetism and Aeronomy and the Faculty of Earth Sciences, University of Istanbul, and was attended by 95 scientists from 17 countries. The European participation was predominant over that from other continents. The IUGG supported the Workshop with a travel grant.

The Workshop was introduced by words of greeting from representatives of the University of Istanbul and the Turkish National IUGG Committee.

The scientific program of the Workshop consisted of nine half-day sessions of which the last was reserved for reports from the summarizers and closing remarks.

The Workshop program focused on the following topics:

(i) Electrical properties of minerals and rocks in relation to crustal and upper mantle conditions

(ii) Geophysical prospecting with electromagnetic methods

(iii) Observational techniques on land and sea

(iv) Forward and inverse problems in electro-magnetic studies

(v) Time dependent transfer functions: Seismo-magnetic and vulcano-magnetic effects

(vi) Electrical conductivity structure in the lower crust

(vii) Electro-magnetic induction in the oceans.

About 65 papers were read, eleven of them as invited review papers.

At an evening session, progress on the ELAS = Electrical conductivity of the asthenosphere project was discussed (see IAGA Resolution No. 6., Seattle, 1977). At another evening session Turkish geophysicists gave information about their EM earthquake prediction methods used in the area of the Anatolian fracture zone and South Europe.

The Working Group held a business meeting where recommendations were made with regard to the selection of the place of the next workshop, the WG conferences at the Edinburgh IAGA General Assembly, publication of the review papers, the structure and topics of the next meetings, etc.

The Turkish hosts, the Local Organizing Committee (Chairman: Dr Işıkara) took care of the relaxation of the participants by colourful programs, such as a reception at the University of Istanbul, a nice one-day excursion in and around Istanbul and a Turkish evening. These occasions gave opportunities to deepen friendly and human contacts between the participants.

This issue of *Geophysical Surveys* contains the invited reviews.

In the first review Hinze examines the electrical properties of minerals and rocks. He restricts himself to two topics: (i) laboratory measurements on basalts, and (ii) on minerals relevant for the Earth's mantle.

After describing the main types of the signal sensors Mosnier remarks in his review that no one kind of device, not even the SQUID, is adequate to solve all the problems. The second review on observational technique written by Fischer gives a detailed description of the SQUID magnetometer and of the Remote Reference method as an effective tool for the suppression of local noise. The usefulness of in-field data processing is also emphasized.

Tarlowski shows in his review that progress on the forward and inverse problems in electromagnetic studies has been rather slow and that no major new idea has emerged during the last two years.

The three reviews: 'The Time-Dependence of Electromagnetic Response Functions', by Beamish, 'Magnetic Field Anomalies Associated with Geodynamic Phenomena', by Rossignol, and 'Changes in Transfer Functions with Time', by Kharin present several well-observed examples to show precursory effects in the electromagnetic field, primarily with respect to earthquake occurrence. This subject has a particular relevance to Turkey, the host country of the Workshop.

The comprehensive review by Gregori and Lanzerotti reflects with their computerized data collection the world-wide nature of the electrical conductivity structures in the lower crust and therefore its importance in understanding the physics of the Earth.

In the review of Fonarev attention is paid mainly to electromagnetic induction studies in the Arctic Basin.

Dr Isikara and Dr Malin kindly accepted the Committee's request to be Guest Editors for the purpose of publishing the above mentioned review papers. I am indebted to Dr Isikara and Dr Malin for their great editorial work.

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*Chairman,*  
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