

Preface

The Second Workshop on Electromagnetic Induction in the Earth was held in Ottawa, Canada, August 22–28, 1974. The meeting was sponsored by the International Union of Geodesy and Geophysics, the International Association of Geomagnetism and Aeronomy and the Department of Energy, Mines and Resources of the Government of Canada and was funded by the first and last of these authorities. Some 125 participants from twenty-one countries took part and the great majority attended all sessions with evident enthusiasm.

During the seven days there were thirteen scientific sessions, of which eleven were led by invited review papers. The Second Workshop was designed to cover different topics from those of the First (Edinburgh) Workshop two years earlier, and these were introduced by a new set of invited speakers. Twelve review papers, including one which could not be presented in Ottawa because of illness, appear in this volume.

The numbers of contributed papers to the sessions on magnetotelluric studies (with 21 contributed papers), non-synoptic small array studies (14), magnetometer array studies (two-dimensional) (13) and numerical and analogue modelling methods (11) indicate the intense research effort by those present in these areas. The other sessions were somewhat smaller: analytical solutions to global and local problems (7), relationships between electrical conductivity and other geophysical parameters in the Earth (5), artificial field studies (4), laboratory and theoretical studies of conductivity (3), electrical conductivity in the Moon and planets (3), morphology of slowly varying fields (2), morphology of substorm fields (2), inversion in the global one-dimensional case (2), and inversion to two-dimensional structures (1).

The inversion of observed fields to conductive structure has been studied only in an exploratory way, and this embryonic state of unique inversion and its difficulties for electromagnetic fields are reflected in the few papers in these sessions. Sessions on long-period (daily variation) and substorm fields, regarded as incident fields for induction studies, showed that more liaison is needed between those who study these external fields and those who study electromagnetic induction. Better communication is also needed between those who study electromagnetic induction and those who study conductivity in rocks at high temperatures and pressures. It is also becoming clear that the use of artificial fields in conjunction with highly sensitive magnetometers will lead to major advances in the study of conductive structure.

Among the social events was a memorable conference dinner in the Salon of the National Arts Centre, at which Dr. K. Whitham gave the after-dinner speech. After dinner most participants enjoyed a performance of choreographed Canadian folk-dances by Les Feux Follets.

During the Workshop a cable was received from Dr. A. Àdàm conveying the invitation of the Hungarian Academy of Sciences for the Third Workshop to be held in Sopron, Hungary in late June of 1976. This invitation was enthusiastically accepted.

The success of the workshop was due in large measure to the work of the local committee which included Mrs. M.S. Bradfield, Dr. P.A. Camfield, Mr. J.M. DeLaurier, Dr. G.D. Garland, Dr. E.R. Niblett and Dr. P.H. Serson. In arranging the program, we were grateful for much efficient help from Mrs. L. Cech.

D.I. GOUGH and F.W. JONES (Guest Editors)