

Preface

Working Group I-2 of the International Association of Geomagnetism and Aeronomy (IAGA) held its 15th Workshop on Electromagnetic Induction in the Earth in the city of Cabo Frio, Brazil, from August 19 to 26, 2000. This was the first time that the biennial Workshop has been held in South America, which enabled a higher participation level than usual by scientists and students from this region. Despite the distance from the major centers of EM induction studies in the northern hemisphere, the Cabo Frio Workshop was well attended with almost 140 participants representing a total of 25 countries from around the globe.

The scientific programme was divided into the following thematic sessions:

1. Environmental and geotechnical control and investigation with electrical and EM techniques;
2. Applied and fundamental EM and CSMT in ocean studies;
3. Studies of the earth's mantle from long-period ground-based and satellite EM data;
4. New techniques on tensor decomposition and multidimensional forward modeling;
5. EM imaging: inversion and interpretation approaches;
6. Case studies of electrical and EM surveys for natural resources;
7. Array EM studies;
8. Local and regional electromagnetic studies;
9. New instrumental and experimental approaches and results.

In total 202 contributed papers were presented orally or as posters in these nine sessions. Additionally, four invited review papers introduced sessions 1, 6, 7, and 8. Each session concluded with a discussion period, starting with comments from a panel of selected participants on their impressions of the scientific highlights in the papers that had been presented, followed by a general discussion open to all members of the audience. The full review papers and the abstracts of the contributed papers were included in the abstract volume, which was available to attendees upon registration.

For this Cabo Frio EM workshop, an expansion of the traditional format was carried out with the inclusion of short courses. The main objective of these short courses was to enable emerging and established researchers, who are developing new processing and interpretation tools, to share the details of their efforts with others from around the world. Four short courses were organized and covered the topics considered by the Organizing Committee to be amongst the most important to the current and future developments in EM geophysics. Leaders and topics of the courses were: Fiona Simpson (Strategies for handling 3D or anisotropic data), Gary Egbert (Robust processing), Randy Mackie (2-D MT inversion), and Jim Tyburczy (The relation of laboratory conductivity measurements to field observations).

This Special Issue of *Earth, Planets and Space* contains twenty of the contributed papers that were subsequently submitted and accepted for publication. All of them were subjected to the normal review process for this journal, which requires a minimum of two referees for each paper. Most of the nine sessions listed above are covered by the papers appearing here. For publication they have been grouped in the following general topics: oceanic EM studies (1 paper), data processing (2 papers), theoretical modeling and inversion (7 papers), and local/regional studies (10 papers). Several areas of topical interest to the electromagnetic induction community and geophysicists in general are treated in these papers and we hope that this issue will become a useful reference source.

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