

Preface

13th International EISCAT Workshop

This special issue contains invited and contributed papers presented at the 13th bi-annual EISCAT International Workshop held in Mariehamn on the Åland Islands in the south-west of Finland on 6–10 August 2007. The workshop was attended by 98 scientists from 11 countries. The Workshop was preceded by a one-week Radar School in Mariehamn, aimed at new and future users of EISCAT or other incoherent scatter radars. The number of participants attending the first week of Radar School was 32, of which 19 were students and 13 teachers. The second week of the Radar School took place after the Workshop at Sodankylä Geophysical Observatory, which is one of the EISCAT UHF radar sites, and it gave more in-depth knowledge of the radars and of running the experiments. The number of participants attending the second week of the Radar School was 18. The EISCAT Workshop and Radar School were well visible in the local media on Åland, including articles in the newspapers, a radio interview, and a public lecture.

Altogether 109 presentations were given at the Workshop, of which 88 were oral and 21 posters. The Workshop was organized by topic and included nine oral sessions and a poster session:

- | | |
|--------------|--|
| Session I | Session in honour of Professor Tor Hagfors |
| Session II | Meteor and interplanetary space studies with large aperture radars |
| Session III | Novel developments in radar techniques and applications |
| Session IV | Mesosphere and D-region studies |
| Session V | Magnetosphere-ionosphere-atmosphere coupling studies |
| Session VI | Auroral phenomena |
| Session VII | Structures and dynamics of the polar cap and cusp |
| Session VIII | Ionospheric plasma physics and scattering mechanisms |
| Session IX | Ionospheric modification by radio waves |

The session in honour of Professor Tor Hagfors included two important aspects: historical talks and talks taking future views of the incoherent scatter (IS) method. The US has recently built new IS radars and EISCAT is taking steps to upgrade its mainland radar facilities. Session III presented novel inventions of pulse coding and analysis methods as well as technical solutions related to the ongoing design study of the EISCAT_3D radar. As the session names indicate, there is a wide range of scientific topics that can be studied by the incoherent scatter method, not to forget the EISCAT Heating facility. The new generation IS radars will facilitate entirely new science, even in the traditional topics. We are confident that there will be a bright future for incoherent scatter science, in which the EISCAT countries will continue to play a leading role.

We are grateful to the Editor, the Topical Editor, the reviewers, the conveners of the sessions, and all the authors who contributed to the workshop and to the final papers. We thank our colleagues and staff at the University of Oulu, the Sodankylä Geophysical Observatory, especially T. Ulich and J. Manninen, and the Finnish Meteorological Institute and acknowledge the support of Academy of Finland, International Union of Radio Science (URSI, Commission G), the Government of Åland, the Municipality of Mariehamn, and Ålands Datakommunikation Ab (ÅLCOM).

EISCAT is an international association supported by China (CRIRP), Finland (SA), Germany (DFG), Japan (STEL and NIPR), Norway (NFR), Sweden (VR) and United Kingdom (STFC).

Anita Aikio, Ian McCrea, and Björn Gustavsson
Special Issue Editors