

Preface

The International Symposium on Dynamics and Structure of the Mesopause Region (the DYSMER symposium) was held in Kyoto at the Radio Atmospheric Science Center (RASC) of Kyoto University on March 16–21, 1998. The Symposium was devoted to the dynamics and structure of the mesosphere and lower thermosphere, with particular emphasis on the wave propagation, interaction, and instability processes that shape this region.

The advisory board of the DYSMER symposium was composed of C.-H. Liu, Hiroshi Oya and Susumu Kato. The symposium was organized by an international program committee, including Peter Dyson, David C. Fritts (Co-Chair), Shoichiro Fukao, Hiroshi Fukunishi, Maura E. Hagan, Kiyoshi Igarashi, Saburo Miyahara, Chikao Nagasawa, Akio Nomura, Shoichi Okano, Yuri Portnyagin, Gordon G. Shepherd (Co-Chair), Hisao Takahashi, and Toshitaka Tsuda (Secretary).

The DYSMER symposium was primarily organized within the framework of PSMOS (Planetary Scale Mesopause Observing System) of SCOSTEP, and it had joint scientific co-sponsorship by ICMA (International Commission on the Middle Atmosphere) of IAMAS, the Society of Geomagnetism and Earth, Planetary and Space Sciences (SGEPSS) and the Meteorological Society of Japan. A total of 126 scientists from 15 countries attended the symposium, whereof 51 were from outside Japan.

The main topics of the symposium were ground-based radar/optical observations, satellite and rocket measurements, modeling and theory of atmospheric wave and turbulence processes near the mesopause, and the implications of these processes for transport and diffusion. The five full days of the symposium were composed of eight main sessions: (1) Gravity waves and turbulence (chairs: W. K. Hocking, D. C. Fritts, and R. A. Vincent), (2) Atmospheric tides (chairs: S. K. Avery and M. E. Hagan), (3) Planetary waves (chairs: J. M. Forbes, Yu. I. Portnyagin, and A. H. Manson), (4) Layered structure (chairs: U.-P. Hoppe and C. S. Gardner), (5) Thermal structure of the mesopause (chair: C. Nagasawa and F.-J. Lübken), (6) Neutral wind in the lower thermosphere (chair: H. Fukunishi), (7) Global structure of airglow (chairs: H. Takahashi and W. E. Ward), and (8) Small scale structure of airglow (chairs: M. J. Taylor and S. Fukao).

This special issue of *Earth, Planets and Space* (EPS) is an outcome of the symposium, consisting of 41 papers, which are basically arranged according to the session program of the DYSMER symposium. We hope that this special issue have successfully assessed current understanding of the diverse dynamical processes defining the structure and variability of the mesopause region and its coupling to higher and lower altitudes, and will become a useful reference for future research activities.

David C. Fritts, Gordon G. Shepherd, and Toshitaka Tsuda
(Guest editors of this special issue of EPS)