

Preface

The XI International Joint Symposium “Atmospheric and Ocean Optics. Atmospheric Physics” was held by the Institute of Atmospheric Optics SB RAS and the Institute of Solar-Terrestrial Physics SB RAS on June 23–26 of 2004 in Tomsk in accordance with the decision of the Presidium SB RAS and with the Schedule of Meetings and Conferences SB RAS for 2004.

Co-chairs of the Symposium were Professor **G.G. Matvienko** (Tomsk) and Academician **G.A. Zherebtsov** (Irkutsk).

The Symposium Program incorporated 312 reports, including 10 plenary, 94 oral, and 208 poster reports.

It is important to note that 73 participants (every third person) were younger than 33.

The Symposium involved two plenary sessions; four conferences included 13 topical sessions and two poster sessions, each incorporating two conferences. Ten reports presented at the plenary sessions were devoted to the most urgent problems of atmospheric optics.

At the conference “**Molecular spectroscopy and atmospheric radiative processes,**” the discussion was focused at the problems of most efficient use of results of classical molecular spectroscopy in constructing climatic models and algorithms for geophysical applications of atmospheric optics.

The conference “**Optical radiation propagation in the atmosphere and ocean**” dealt with the results of the programs on investigation into atmospheric aerosol, methods for solution of the radiative transfer equation, in particular, for nonspherical particles, as well as methods for retrieval of the particle microstructure from optical measurements. Peculiarities of fluctuations of optical fields in the turbulent atmosphere and the related issues of correction of optical beams and optical images, in particular, by adaptive optics methods have been discussed in detail.

The conference “**Optical investigations of the atmosphere and ocean**” incorporated the largest number of participants. It included 34 oral reports and 79 posters. Many reports were devoted to new measurement systems, adaptation of sensing systems to some applied problems, and calibration of measurers.

At the conference “**Atmospheric physics,**” 18 oral reports and 43 posters were presented with emphasis on investigation of the role of atmospheric aerosol in UV radiation transfer.

It should be noted that the scientific discussion within the Symposium favored the useful exchange of research data and ideas; revealed the most efficiently working research teams, and demonstrated the main field of their research; a growing interest to geophysical investigations was observed.

The participants of the Symposium believe that all research areas have good promises for further development.

A wider participation of foreign scientists in the next Symposium to be held in 2005 is strongly desirable.

It was decided:

– To publish the reports presented at the Symposium in the topical issue of Proceedings of SPIE;

– To recommend the publication of the topical issue of the journal *Atmospheric and Oceanic Optics* on the basis of urgent materials, included in the reports presented;

– To acknowledge a high scientific and organizational level of the Symposium;

– To thank the RFBR, SPIE, and personally Doctor **E.I. Akopov** for financial support of the Symposium and publication of the Symposium proceedings.

This topical issue of *Atmospheric and Oceanic Optics* was prepared just in accordance with this decision.

Chair of the Symposium Organizing Committee
Professor **V.P. Lukin**