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Preface

Polarimetric detection, characterization, and remote sensing

The NATO Advanced Study Institute (ASI) on “Special Detection Technique (Polarimetry) and Remote Sensing” took place in Kyiv, Ukraine, 12–25 September 2010. The main focus of the conference was photopolarimetry, a rapidly developing, multidisciplinary topic based on fundamental physics and having numerous remote sensing, astrophysical, biomedical, military, ecological, and technological applications. The ASI was organized in such a way that much of the key research was presented by leading experts most familiar with the respective major topics. Additional contributed talks dealing with aspects related to the feature lectures were presented by scientists and PhD students having a deep working knowledge of the particular nuances. This 2010 ASI built on the great success of the 2003 ASI on “Photopolarimetry in Remote Sensing” convened in Yalta, Ukraine [1,2].

Given the rapidly growing importance of polarimetry and the vast amount of useful material presented at the ASI, it was essential to archive the well-established and new knowledge in the form of appropriate peer-reviewed

publications available to the entire scientific community. By its very design, Ref. [3] contains only tutorial reviews of specific fields of research, with a minimum of original material. Recent original results as well as several additional reviews are included in this special issue of the *Journal of Quantitative Spectroscopy and Radiative Transfer (JQSRT)*.

JQSRT Session and Reception

An important part of the ASI agenda was the *JQSRT* Session and Reception sponsored by Elsevier. This event was dedicated to the 50th anniversary of *JQSRT* [4] and included a detailed overview of the journal; its history, evolution, and accomplishments; and its current place among the group of journals covering relevant research fields. It was demonstrated that *JQSRT* has succeeded in becoming a community journal and represents a preferred publication outlet for high-quality original papers and comprehensive reviews on electromagnetic



Fig. 1. The lively *JQSRT* reception sponsored by Elsevier.

scattering, quantitative spectroscopy, radiative transfer, and physically based remote sensing. The journal owes its success to the dedication and enthusiasm of its authors, reviewers, editors, and management (Fig. 1).

JQSRT Young Scientist Award

An integral part of the ASI was the presentation of the JQSRT Young Scientist Award in the category of electromagnetic scattering and remote sensing. The award was voted on by 30 senior scientists and was presented to Dr. Pavel Litvinov for his outstanding contributions to the field of electromagnetic scattering by particles. We wholeheartedly congratulate Pavel on this well-deserved distinction.

Dr. Pavel Litvinov (Pavlo Lytvynov) obtained his Ph.D. degree in physics from the Kharkiv National University in 2000 and then worked as a Research Scientist at the Institute of Radio Astronomy of the National Academy of Sciences of Ukraine in Kharkiv. From 2008–2011, he was a Research Scientist at the Space Research Organization Netherlands (SRON). Since February 2011, he has been a Research Scientist at the Laboratoire d'Optique Atmosphérique, CNRS/Université de Lille 1, France. Pavel's research interests include electromagnetic scattering by the surfaces of the Earth and other Solar System bodies; light scattering by particles in planetary atmospheres; photopolarimetric remote sensing of the Earth and planets; aerosol effects on the Earth's global climate; and coherent backscattering effects exhibited by random media and multi-particle systems. Dr. Litvinov has published numerous peer-reviewed journal papers, including 6 papers in JQSRT (Fig. 2).

Organizational structure of the NATO ASI (Fig. 3)

Directors

Michael Mishchenko	NASA Goddard Institute for Space Studies, New York, USA
Yaroslav Yatskiv	Main Astronomical Observatory, Kyiv, Ukraine

Scientific organizing committee

James Hough	University of Hertfordshire, Hatfield, UK
Hal Maring	NASA Headquarters, Washington, DC, USA



Fig. 2. Pavel Litvinov.

M. Pinar Mengüç	University of Kentucky, Lexington, KY, USA; and Ozyegin University, Istanbul, Turkey
Vera Rosenbush	Main Astronomical Observatory, Kyiv, Ukraine
Gorden Videen	US Army Research Laboratory, Adelphi, MD, USA

Local organizing committee

Tamara Bul'ba	
Alexandra Ivanova	
Nikolai Kiselev	
Tanya Korsun	
Nadya Kostogryz	
Irina Kulyk	Secretary
Tanya Nikityuk	
Vera Rosenbush	Chair

Main lecturers

Stefano Bagnulo	Armagh Observatory, UK
Adrian Doicu	Remote Sensing Technology Institute, Germany
Oleg Dubovik	University of Lille, France
James Hough	University of Hertfordshire, UK
Vadym Kaydash	Kharkiv National University, Ukraine
Nikolai Khlebtsov	Institute of Biochemistry and Physiology of Plants and Microorganisms, Russia
Theodor Kostiuik	NASA Goddard Space Flight Center, USA
Anny-Chantal Levasseur-Regourd	University of Paris, France
Hal Maring	NASA Headquarters, USA
M. Pinar Mengüç	University of Kentucky, USA; and Ozyegin University, Turkey
Michael Mishchenko	NASA Goddard Institute for Space Studies, USA
Karri Muinonen	University of Helsinki, Finland
Gorden Videen	Army Research Laboratory, USA
Nikolai Voshchinnikov	St. Petersburg University, Russia
Yaroslav Yatskiv	Main Astronomical Observatory, Ukraine

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Fig. 3. Participants of the NATO Advanced Study Institute on “Special Detection Technique (Polarimetry) and Remote Sensing,” Kyiv, Ukraine, 12–25 September 2010.

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Any opinions, findings and conclusions or recommendations expressed in this special issue are those of the authors and do not necessarily reflect the views of the NATO Science for Peace and Security Programme, NASA, the US Army International Technology Center—Atlantic, the US Office of Naval Research Global, Elsevier, or the US National Science Foundation.

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