*environmental sciences proceedings*

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# Preface: The 5th International Electronic Conference on Remote Sensing †

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## 1. Introduction

### *1.1. Conference Introduction*

The 5th International Electronic Conference on Remote Sensing, with a focus on "Advances in experimental and theoretical studies of the terrestrial atmosphere and underlying surface" was held on 7–21 November 2023. The main aim of this conference was to present recent advances in experimental and theoretical studies of the atmosphere (trace gases, atmospheric aerosol, cloudiness, precipitation, temperature, and pressure) and underlying surface, with a focus on the cryosphere, which has nonlinear impacts on climate change trends and the warming of our planet. This conference promoted the use of remote sensing and geospatial information technology and made it possible to exchange innovative approaches in the area of remote sensing.

### *1.2. Conference Topics*

**S1. Remote sensing systems and techniques**
S1-1. Ground-based, airborne, shipborne, and spaceborne remote sensing systems;
S1-2. Hyperspectral remote sensing;
S1-3. Lidar remote sensing;
S1-4. Radar remote sensing;
S1-5. Passive remote sensing.

**S2. Remote sensing: physical fundamentals and inverse theory**
S2-1. Electromagnetic light scattering;
S2-2. Radiative transfer;
S2-3. Inverse theory.

**S3. Remote sensing applications**
S3-1. Oceanic remote sensing;
S3-2. Vegetation remote sensing;
S3-3. Remote sensing of land use and land cover change;
S3-4. Remote sensing of snow and ice;
S3-5. Remote sensing of precipitation;
S3-6. Aerosol remote sensing;
S3-7. Cloud remote sensing;
S3-8. Remote sensing of atmospheric trace gases.

## 2. Committee Members

### *2.1. Conference Chairs*

Dr. Alexander Kokhanovsky, German Research Centre for Geosciences, Potsdam, Germany.

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*2.2. Session Chairs*

Dr. Luca Lelli, Institute of Environmental Physics and Remote Sensing, University of Bremen, Germany.

Dr. Dmitry Efremenko, Remote Sensing Technology Institute, German Aerospace Center (DLR), Oberpfaffenhofen, Germany.

Prof. Dr. Riccardo Buccolieri, Department of Environmental and Biological Sciences and Technologies, University of Salento, Italy.

*2.3. Scientific Organizing Committee*

Dr. Alexander Smirnov, Science Systems and Applications, Inc. Biospheric Sciences Laboratory, NASA Goddard Space Flight Center, Greenbelt, USA.

Dr. Bingqiang Sun, Department of Atmospheric and Oceanic Sciences and Institute of Atmospheric Sciences, Fudan University, China.

Dr. Dmitry Efremenko, Remote Sensing Technology Institute, German Aerospace Center (DLR), Oberpfaffenhofen, Germany.

Prof. Dr. Hao Zhang, Planetary Science Institute, China University of Geosciences (Wuhan), China.

Prof. Dr. Ioannis Z Gitas, School of Forestry and Natural Environment, Aristotle University of Thessaloniki, Thessaloniki, Greece.

Dr. Javier J. F. Calleja, Remote Sensing Applications (RSApps) Research Group, Department of Physics, Polytechnic School of Mieres, University of Oviedo, Mieres, Spain

Prof. Dr. Jeff Dozier, Bren School of Environmental Science and Management, University of California, Santa Barbara, USA.

Dr. Leonid A. Dombrovsky, Joint Institute for High Temperatures of the Russian Academy of Sciences, Moscow, Russia.

Dr. Luca Lelli, Institute of Environmental Physics and Remote Sensing, University of Bremen, Germany.

Dr. Nicola de Quattro, Telespazio Belgium, Noordwijk, the Netherlands.

Dr. Roberto Salzano, Institute for Atmospheric Pollution Research, National Research Council of Italy (CNR), Florence, Italy.

Dr. Sergey Savenkov, Taras Shevchenko National University of Kyiv, Kyiv, Ukraine.

Prof. Dr. Sonoyo Mukai, School of Applied Information Technology, The Kyoto College of Graduate Studies for Informatics, Kyoto, Japan.

Dr. Giorgos Mallinis, The Aristotle University of Thessaloniki, Thessaloniki, Greece.

Dr. Jordi Cristóbal Rosselló, 1. Efficient Use of Water in Agriculture Program, Institute of Agrifood Research and Technology, Fruitcentre, Parc Científic i Tecnològic Agroalimentari de Lleida 23, 25003 Lleida, Spain; 2. Department of Geography, Autonomous University of Barcelona. Campus de Bellaterra, Edifici B, Carrer de la Fortuna, s/n, 08193 Bellaterra, Barcelona.

Dr. Xiongwu Xiao, Information Engineering in Surveying, Mapping, and Remote Sensing (LIESMARS), Wuhan University, Wuhan, China.

## 3. Keynote Presentations

**S1. Remote sensing systems and techniques**

Luca Lelli: Welcome Speech.

Tommaso Orusa: RIDE Earth Observation Program: Expectations and Suggestions for Alpine Environments

Bilal Hammoud: Towards Effective Monitoring of Marine Oil Pollution using Drones: Challenges and Potentials.

Antoine Collin: The Use of Ultra-High-Resolution UAV Lidar Infrared Intensity for Enhancing Coastal Cover Classification.

**S2. Remote sensing: physical fundamentals and inverse theory**

Riccardo Buccolieri: Welcome Speech.

Boris Boiarskii: Comparative Analysis of Remote Sensing via Drone and On-the-go Soil Sensing via Veris U3: A Dynamic Approach.

Ezra MacDonald: MineSegSAT: An Automated System to Evaluate Mining-Disturbed Area Extents from Sentinel-2 Imagery.

Shazia Pervaiz: Satellite-Based Analysis of Air Quality Altering Factors: A Multi-Sectoral Guide for Mitigating Environmental Smog.

Emine Senkardesler: Estimating Corn Phenology by Integrating Object - Oriented Remote Sensing and Machine Learning to Create Field Model Environmental Smog.

**S3. Remote sensing applications**

Dmitry Efremenko: Welcome Speech and Presentation—Enhancing Photon Transport Simulation in Earth's Atmosphere: Acceleration of Python Monte Carlo Model Using Vectorization and Parallelization Techniques.

Knut Stamnes: Lidar/Radar Propagation in a Coupled Atmosphere–Surface System: Solutions Including Multiple Scattering Effects.

Anxin Ding: Evaluating and Improving the Hapke Model to Characterize the Reflectance Properties of Soil.

Pavel Smirnov: Remote Sensing Based on the 3D Model of the Atmosphere.

## 4. Partners

The 5th International Electronic Conference on Remote Sensing was supported by the following journals and organizations (Figure 1):


**Figure 1.** Media partners.

**Conflicts of Interest:** The author declares no conflict of interest.