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Remote Sensing of Clouds and the Atmosphere XII

**Adolfo Comerón
Richard H. Picard
Klaus Schäfer
James R. Slusser
Aldo Amodeo**
Editors

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Introduction

The scope of this 12th edition of the Remote Sensing of Clouds and the Atmosphere conference covers a broad range of topics, from theoretical analysis to end-user applications of remote sensing products, passing through a variety of intermediate issues, such as modeling, experimental and instrumental techniques and methods, and inversion algorithms. However difficult to summarize such a diversity of aspects, some clear scientific and technological trends, frequently intersecting each other, emerge when browsing through the different papers included in these proceedings.

The modeling and experimental communities come closer through feedback between measurements and ever more sophisticated models. Connection is made between models and observations at a variety of scales, from local to regional to global, through the synergies between satellite, airborne and ground-based measurements. Advances are reported for a wide range of atmospheric vertical regions, including atmospheric boundary layer, troposphere, stratosphere and MLTI (mesosphere, lower-thermosphere, ionosphere).

The availability of ever more powerful computation capabilities facilitates multi-instrument data merging to improve the characterization of atmospheric parameters and model testing: several instruments are interconnected into a single macroinstrument, geographically dispersed observations systems are combined into a single infrastructure (e.g. AERONET, EARLINET...), remote sensing instruments get out of the laboratory and gather data in field campaigns with unprecedented flexibility, and the outputs of different instruments are combined to provide enhanced data products (e.g. the A-Train).

The presentations were arranged into six oral topical sessions:

- Remote sensing of aerosols, trace gases, and meteorological parameters
- remote sensing of clouds
- Lidar, radar, and passive (microwave, infrared, visible, and UV) atmospheric measurements techniques
- Radiative transfer
- Remote sensing of the middle and upper atmosphere
- Remote sensing of emission Sources, exhausts, and fires.

In addition, one extensive poster session was held with presentations classified according to the topics of the oral sessions. Poster discussions are becoming an increasingly useful complement to the oral sessions.

These proceedings contain the reviewed and revised papers corresponding to the presentations. No distinction is made between those corresponding to oral and poster presentations, as the only difference is the way in which the technical content was delivered to the audience.

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