



Radiative Transfer Models of Atmospheric and Cloud Properties

Guest Editor:

Dr. Stephan Havemann

Met Office, Foundation and
Weather Science, Exeter EX1 3PB,
UK

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Message from the Guest Editor

Dear Colleagues,

Versatile state-of-the-art atmospheric radiative transfer models are of paramount importance in the research of the effect of atmospheric greenhouse gases, clouds, and aerosols in climate simulations. These radiative transfer models must make use of the latest available information on gaseous absorption properties as well as on the optical properties of cloud and aerosol particles. Numerical weather prediction and climate models require accurate and fast radiative transfer codes for the simulation of vertical profiles of atmospheric heating/cooling rates. Another area with ever increasing demand on the radiative transfer codes is the assimilation of satellite data with new missions like the polar-orbiting IASI-NG, and the geostationary MTG-IRS, to be launched in a couple of years. Future missions will further extend the range of the electromagnetic spectrum that is monitored from space. Studies that consider the importance of 3D effects, polarization, and cloud overlap, as well as schemes that can model these effects fast while remaining sufficiently accurate, are therefore also welcome.

Dr. Stephan Havemann
Guest Editor





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Editor-in-Chief

Prof. Dr. Ilias Kavouras

Environmental, Occupational,
and Geospatial Health Sciences,
CUNY School of Public Health,
New York, NY 10027, USA

Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

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Atmosphere Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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