

Special Issue on Atmospheric Boundary-Layer Processes and Atmospheric Modeling

Call for Papers

The atmospheric boundary layer (ABL), extending upward from the Earth's surface, is substantially influenced by energy and moisture from the underlying surface through turbulent transport processes. More than 50% of the atmospheric kinetic energy is dissipated within this ABL. Several boundary-layer processes are known to have a profound influence on the climate system. Appropriate representation of these processes in numerical atmospheric models and air quality models is accomplished through different ABL parametrization schemes. Despite considerable progress in the field of atmospheric modeling in the past few decades, the errors and uncertainties associated with the ABL parametrization schemes remain one of the primary sources of inaccuracies in numerical weather prediction (NWP) model simulations. Thus, the underlying physics behind the boundary-layer processes and their accurate representation in numerical atmospheric models remain a subject of investigation for many researchers.

We invite investigators to contribute with their original research articles as well as review articles that will stimulate the continuing efforts to broaden our understanding of the boundary-layer processes and their representation in numerical atmospheric models. We are particularly interested in articles related to new theoretical and experimental investigations on boundary-layer processes over land, ocean, and coastal stations. In this special issue, we would also like to draw the attention of atmospheric modeling community to contribute with new findings in the field of NWP and specially on ABL. Potential topics include, but are not limited to:

- Boundary-layer processes over land and oceans
- Role of boundary-layer clouds in climate science
- New experimental techniques for probing the ABL
- Coastal ABL processes and mesoscale atmospheric circulations
- Importance and parametrization of ABL processes in numerical atmospheric models

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Manuscript Due	Friday, 4 July 2014
First Round of Reviews	Friday, 26 September 2014
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