Special Issue

Highly Resolved Numerical Models in Regional Weather Forecasting

Message from the Guest Editors

Numerical Weather Prediction (NWP) models' accuracies depends significantly on grid resolution. High-resolution models are essential for properly capturing interactions between scales of different sizes. However, demonstrating the consistency property of a complex numerical system such as an NWP remains challenging, and not only because of the high computational power demand; key areas in which further advancements are required include, among others, the tuning of three-dimensional turbulence models such as Large Eddy Simulations (LES), the accurate modeling of exchange energy between soil and atmosphere in urban and rural areas, and complex orography. This Special Issue invites scientific contributions focused on refining weather simulations, at a sub-kilometer scale, through LES turbulence models, particularly in their ability to capture local convective phenomena in urban environments and complex terrains. Studies that explore land–soil–atmosphere interactions and atmosphere–ocean interaction in this context are of special interest.

Guest Editors

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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!

Editor-in-Chief

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