



Atmospheric Pollutant Dispersion over Complex Terrain

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Message from the Guest Editor

“Complex terrain” defines a region characterized by heterogeneous topography (mountains, hill-chains, coastlines) and extends to landuse variability. The dispersion of pollutants in complex terrain is characterized by the interaction of atmospheric processes at different space and time scales. Local-scale circulations are originated by mechanical and thermal orographic forcing and interplay with the mesoscale flow and the synoptic circulation. Air stagnation, separation of the flow, slope and valley circulations, and sea-land breeze affect the pollutant dispersion and make its description and evaluation indeed more complicated than in homogeneous and flat terrain. This Special Issue is devoted to theoretical, observational, and modelling perspectives for studying the atmospheric pollutant dispersion in complex terrain, at all scales, from the long-range to the local scale. Topics of interest of this Special Issue thus include theoretical study and parameterization of all processes determining the pollutant dispersion in complex terrain, their experimental investigation in field campaigns, and their numerical or physical modelling.





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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!

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