Special Issue

Planetary Boundary Layer Dynamics and Their Influence on Atmospheric Pollution

Message from the Guest Editors

The planetary boundary layer (PBL), the lowest part of the atmosphere directly influenced by surface processes, plays a crucial role in modulating air quality and pollution levels. The PBL is crucial in determining how pollutants are transported vertically and horizontally and influenced by diurnal temperature changes, turbulence, and meteorological conditions. This Special Issue aims to advance the understanding of how the PBL affects pollution transport, accumulation, and dispersion across diverse environments. This Issue seeks contributions that explore the interactions between PBL dynamics and their impact on pollutant dispersion. We invite observational, experimental, and modeling studies that examine how variations in the PBL structure, such as turbulence, mixing processes, and temperature inversions, influence the behavior of pollutants and advance knowledge on improving pollution dispersion models. This Special Issue will provide valuable insights into the complex relationship between atmospheric boundary layer dynamics and air quality, aiding in developing more effective environmental policies and strategies to address atmospheric pollution challenges.

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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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