Special Issue

Interactions Among Aerosols, Clouds, and Precipitation, as Well as Their Impact on Climate Systems

Message from the Guest Editors

Aerosols, originating from both natural and human sources, contribute to complex interactions within atmospheric processes. These include impacts on solar radiation transfer, cloud formation, precipitation, and more. The impact of aerosols on clouds and precipitation is related to their physicochemical properties and their efficiency to act as cloud condensation nuclei (CCNs) and ice nuclei (INs) for the formation of clouds. Other indirect impacts of aerosols on climate processes are related to their depositions, such as mineral dust deposits on snow, which affect surface albedo. Understanding the environmental interactions between aerosols, clouds, and radiation is essential for improving our knowledge on climate change processes, energy research, air quality, climate change, and extreme weather events. We invite studies focused on aerosols, clouds, radiation, and precipitation that examine their interactions through various approaches, including modeling, direct measurement, satellite observation, and integrated methodologies.

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About the Journal

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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