



Aerosol Influence on Mixed-Phase and Ice Clouds: Laboratory, Field, Remote-Sensing and Modeling Studies

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Message from the Guest Editors

Initiation of primary ice particles through various modes of ice nucleation and precipitation from ice containing clouds has been poorly understood. The observations of atmospheric ice-nucleating particles that govern the heterogeneous nucleation of ice are limited. As a result, there is a lack of appropriate theoretical descriptions of ice particle formation, which is also very difficult to be represented adequately in cloud and climate models.

This important problem has been investigated through combination of multiple approaches, and the session aims to invite contributors to discuss this growing body of literature. Topics include laboratory studies of ice nucleation of various aerosols, new developments of formulations and parameterizations for ice formation, in-situ and remote sensing observations of ice containing clouds, simulations of ice and mixed-phase clouds, aerosol-cloud interaction and their implications towards cloud radiative effects based on cloud-scale, regional and global models. Studies that combine observational and modeling efforts are also welcome.





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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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