



Atmospheric Nucleation Processes: New Particle Formation and Representation in Models

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Message from the Guest Editors

Nucleation in the atmosphere is responsible for the formation of new particles that can subsequently grow to exert a significant impact on the global climate either directly, through the scattering and absorption of solar radiation, or indirectly, by serving as sites for cloud droplet condensation. This Special Issue focuses on this timely topic. We invite contributions from laboratory and field measurements and from theoretical and modeling studies relevant to the effects above, including: atmospheric precursor chemistry, multicomponent homogeneous and heterogeneous nucleation mechanisms, ion-induced nucleation, and growth processes leading to the formation of cloud condensation nuclei. The submission of studies that clarify condensed-phase homogeneous and heterogeneous nucleation mechanisms relating to ice nucleation is also encouraged. Parameterization studies that help bridge the gap between nucleation-related processes and their couplings and impacts on clouds and climate are welcomed, as are theoretical studies geared towards process-level understanding of nucleation mechanisms and their representation in models at different scales.





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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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