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Light-Absorbing Particles in Snow and Ice

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Deadline for manuscript submissions:
closed (31 July 2023)

Message from the Guest Editors

Pure snow has the highest albedo on the natural Earth's surface, and exerts a cooling effect. However, when light-absorbing particles (LAPs) are deposited on snow, they can significantly alter the optical properties of snow and contribute to positive radiative forcing through increased incident solar irradiance absorption due to the reduction of snow albedo. Our understanding of LAPs in snow mainly comes from limited ground-based observations, model simulations, and remote sensing retrievals, but remains far from complete.

We invite the submission of original research articles and reviews on any aspect of light-absorbing particles in snow and ice, including (but not limited to) physicochemical properties of LAPs in snow, LAPs–snow albedo feedback, etc., and their variations across space and time. We encourage studies using the most recent technology (e.g., remote sensing) to address such issues. Modelling simulation studies that focus on the radiative effects of LAPs in snow on the climate system are equally welcome. We are also interested in studies using in situ observations and reanalysis datasets to address spatial and temporal variabilities of LAPs in snow.

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Editor-in-Chief

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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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