Special Issue

Brown Carbon and Its Atmospheric Chemical Evolution

Message from the Guest Editors

Carbonaceous aerosols influence the climate directly through the scattering and absorption of solar radiation. Despite the latest progress quantifying the absorptive properties of black carbon (BC) particles, large uncertainties remain regarding the magnitude of the direct radiative forcing of light-absorbing organic particles, so-called “Brown Carbon” (BrC). This Special Issue will focus on the impacts of source emissions, mixing state, and atmospheric processing on the absorptive and scattering properties of carbonaceous aerosols (BC and BrC). Special attention will be given to work investigating the formation of secondary BrC particles and their optical properties using field or laboratory measurements. We also encourage the submission of manuscripts seeking to improve the representation of light-absorbing carbonaceous aerosols using electromagnetic model calculations (e.g., Mie theory, Rayleigh–Debye–Gans theory) and real-world mixing state representation.

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Deadline for manuscript submissions

closed (28 April 2023)

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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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