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Aerosol Radiative Effects

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Deadline for manuscript submissions:
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Message from the Guest Editors

Even though atmospheric aerosols have been studied extensively, their radiative effects, both direct and indirect, form the largest source of uncertainty in the estimates of the Earth's changing energy budget. Despite their small mass/volume fraction, aerosol particles have a significant impact on radiative transfer, thus affecting the weather and climate. Atmospheric aerosols interact with the solar radiation through scattering and absorption and, to a lesser extent, with the terrestrial radiation through absorption, scattering, and emission. Furthermore, aerosol particles can act as cloud condensation nuclei and ice nuclei upon which cloud droplets and ice crystals form. Consequently, the role of aerosols in the atmosphere is versatile, and aerosols from anthropogenic sources dominate the uncertainty in the total anthropogenic radiative forcing. Manuscripts on all these aspects are welcome for this Special Issue.

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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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