Special Issue

Influencing Factors of Secondary Organic Aerosol (SOA) Formation and Optical Absorption

Message from the Guest Editor

Organic aerosol (OA) is contributing to the pollution in the atmosphere component of carbonaceous aerosol. A group of colored OA that effectively absorb sunlight in the near-ultraviolet to visible range compounds was termed brown carbon (BrC). BrC not only directly affects the global radiation balance and the regional climate by absorbing solar radiation but also indirectly affects the activity of the atmospheric oxidation reaction. The sources, formation mechanism and chemical composition of BrC are complicated. Our understanding of the relationship between the chemical composition and optical properties of BrC remains limited. The optical properties of BrC remain highly uncertain, and we are unable to make an accurate prediction. Hence, BrC contributes significantly to the uncertainty in estimating aerosol radiation forcing by climate models. Therefore, it is important to study the relationship between molecular-level compositions, secondary formation mechanisms and the light absorption properties of BrC, and quantify BrC's contribution to light absorption in the atmosphere.

Guest Editor

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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!

Editor-in-Chief

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