



Research on Atmospheric Water Vapor: Monitoring and Characteristics

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Message from the Guest Editors

Water vapor is a well-known trace gas. Despite its low concentration in the atmosphere, it has a paramount importance in many processes like the hydrological cycle, energy transportation or greenhouse effect. Water vapor varies widely at different scales in the spatial and temporal domains, and therefore it is difficult to study and needs continuous monitoring through different kinds of instrumentation. There is no single instrument able to catch all the variation of the water vapor fields, and therefore the use of coincident data-sets is very valuable in the study of this gas.

This Special Issue aims to present the state-of-the-art in topics related to any water vapor instrumentation (radiosondes, microwave radiometers, photometers, global navigation satellite systems, and so on) and their validation, as well as studies on spatio-temporal analysis, trend analysis, and the study of the water vapor cycle at different time scales. It also covers studies using numerical weather prediction models, assimilation experiments, and the study of the radiative effects of water vapor.

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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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