

## Special Issue

# Atmospheric Water Vapor Observation, Simulation, Prediction and Responses to Climate Change

### Message from the Guest Editor

Water vapor is an active player in the radiative balance and the hydrological cycle of the climate system. It is also an important player as a chemical compound. Water vapor concentrations can vary by orders of magnitude from place to place. Its measurement is therefore essential and determined by using a wide range of in-situ and remotely techniques. These observations are fundamental for numerical weather prediction, climate and atmospheric chemistry models sensible to the high temporal and spatial variability of water vapor concentrations. In the context of climate change, observations are even more fundamental in the upper troposphere and lower stratosphere where increases in water vapor lead to radiative cooling at these levels and induce warming at the surface. Currently, all of the mechanisms that are driving changes in this part of the atmosphere are not fully understood. This Special Issue invites research papers addressing one or more of the aspects of water vapor contributing to atmospheric phenomena on different time and space scales for today's and future climates. Interdisciplinary approach studies will be greatly appreciated.

### Guest Editor

Dr. Quentin Laffineur

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### Deadline for manuscript submissions

closed (20 January 2022)



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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!

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### Editor-in-Chief

Dr. Daniele Contini

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