



Radar Sensing Atmosphere: Modelling, Imaging and Prediction

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Message from the Guest Editors

Radar is a powerful tool to monitor an atmospheric state, which can measure and sense the boundary layer, troposphere, and ionosphere to forecast future weather, even in space. Moreover, the obtained atmospheric data can also be used to correct atmospheric errors in remote sensing observations, communication, and navigation systems. At present, many radar sensing technical means for atmospheric state monitoring have been widely used, which includes direct measurements from radar instruments such as weather radars, cloud radars, and wind profile radars and indirect calculations of tropospheric liquid water content (LWC), ice water content (IWC), and ionospheric total electronic content (TEC) using ground radar data. The radar sensing platform can be implemented on the ground, in the air, in the near space, or even on a satellite. In addition, the utilized frequency is also extended from traditional microwave frequency bands to millimeter wave and terahertz, as well as P-band, high frequency (HF), and other long wave frequency bands. This Special Issue focuses on the latest developments in atmospheric modeling, equipment, and detection methods using radar sensing.





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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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