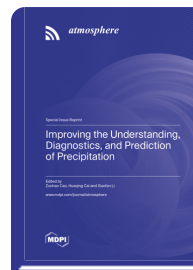*Special Issue Reprint*

Improving the Understanding, Diagnostics, and Prediction of Precipitation

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Edited by
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This reprint is a collection of the papers published in the Special Issue of *Atmosphere* entitled "Improving the Understanding, Diagnostics, and Prediction of Precipitation". It provides atmospheric researchers and operational meteorologists with an update on recent research and its applications on precipitation prediction.

As a result of rigorous peer reviews, 14 papers have been accepted for publication in this Special Issue. These articles cover topics in (a) data assimilation such as assimilation of ground-based microwave radiometers [p. 1] and combined techniques of data assimilation [p. 15]; (b) microphysical parameterizations in NWP models [p. 41]; (c) analog ensemble post-processing [p. 61]; (d) deep learning based short-term intensive rainfall forecast [p. 85], nowcasting [p. 105], and monthly forecast [p. 121]; (e) trend and projection of the long-term spatial-temporal precipitation changes [p. 145]; (f) intercomparison of satellite-based and X-band radar rainfall products [p. 167]; (g) verification of various analyzed precipitation data with observations [p. 191]; (h) climatic patterns of Meiyu and its associated circulations [p. 207]; (i) composite analysis of warm-sector heavy rainfall and its association with large-scale circulations, pre-storm environments, and mesoscale convective systems [p. 221]; and (j) precipitation diurnal cycle [p. 245] and precipitation recycling and moisture sources [p. 263]. It should be noted that all viewpoints in the published papers merely represent those authors' viewpoints, and, certainly, they do not represent our and our organization's viewpoints.

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