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Oral
(Virtual Talk)
In sub-seasonal to seasonal (S2S) weather forecasting, the deployment of Artificial Intelligence (AI) models holds the promise of substantially enhanced and fast predictive capabilities. However, biases inherent in these AI models can critically undermine their accuracy and utility. This study systematically analyzes biases in temperature and precipitation forecasts from three state-of-the- art AI models: Fourcastnet, Pangu-Weather, and Graphcast. We adopt a rigorous, detailed approach to quantify the errors and biases present in these models, utilizing established statistical methods. Our methodology centers on detailed error analysis, comparing AI model outputs with corresponding ground-truth datasets. This comparison involves calculating metrics between model predictions and ground truth values to assess the magnitude of prediction errors. This research presents case studies for S2S forecasting focusing on precipitation and temperature—two critical variables with significant implications for environmental and disaster management planning. The outcomes of this study are intended to assist in refining the development and calibration of AI models for S2S forecasting.
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