

GFDL' s high-resolution seasonal climate prediction system: modeling, initialization and prediction

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This talk will review the recent advances of GFDL' s high-resolution seasonal climate prediction system in terms of modeling, initialization, seasonal prediction, and predictability sources. The high-resolution model substantially improves the model fidelity of simulating the global and regional climate and extremes, hence improving the regional climate prediction skill, and providing skillful seasonal prediction of extreme climate events such as statistics of extratropical storms. Beyond the primary roles of ocean state (e.g., ENSO) in seasonal climate prediction, we found that the atmosphere initial state plays significant roles in improving the short-term seasonal climate prediction. The physical processes translating the observed atmosphere initialization into predictive skill, such as stratosphere-troposphere interaction and air-sea coupling, will be discussed.

Keywords: Seasonal climate prediction, high-resolution modeling , initialization