



## **Simulation of a Severe Autumn/Winter Drought in Eastern China by Regional Atmospheric Modeling System(RAMS)**

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**ABSTRACT:** Compared with European Centre for Medium-Range Weather Forecasts (ERA-interim) Reanalysis data and Global Summary Of Day (GSOD) observation data, the outcomes from RAMS of the 2008/2009 severe autumn/winter drought in eastern china are analyzed in this study. The reanalysis data showed that most parts of north China are controlled by northwest wind which was accompanied by cold air, the warm and moist air from South Sea is so weak to meet with cold air, therefore forming a circulation which is unfavorable for the formation of precipitation over Eastern China. RAMS performs very well over the simulation of this atmospheric circulation, so do the rainfall and air temperature over China and where the drought occurred. Meanwhile, the simulation of the time series of precipitation and temperature behaves excellent, the square of correlation coefficient between simulations and observations reached above 0.8. Although the performance of RAMS on this drought simulation is fairly accurate, there is amount of research work to be continued to complete a more realistic simulation.

**KEY WORDS** RAMS; severe drought; numerical simulation; atmospheric circulation; precipitation and air temperature