

Prediction Experiments of the Arctic Oscillation Index using a Barotropic General Circulation Model

Hiroshi Tanaka[1]

[1] CCS, Univ. Tsukuba

<http://air.geo.tsukuba.ac.jp/~tanaka/>

In this study, the barotropic S-model developed at the University of Tsukuba is applied for the 60-day prediction of the Arctic Oscillation Index (AOI). The target periods are three typical winters (DJF) of AOI positive (1988, 1992, 2006) and negative (2000, 2002, 2005), respectively. According to the results of the predictions, the correlation coefficients between the predicted and observed AOI for 7-day and 21-day mean predictions are 0.90 and 0.83, respectively for positive AOI. Those are 0.94 and 0.55 for negative AOI. It is concluded from the result that the barotropic S-model has sufficient prediction skill for the AOI beyond 2 weeks of the prediction barrier of Chaos.