

## Mechanism of the Decadal-Scale Variation of the Arctic Oscillation Index

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In this study, the barotropic S-model at the University of Tsukuba was integrated for 50 years with an artificial linear trend of the external forcing to excite the Arctic Oscillation. The experiments are repeated for six times with slightly different initial data to construct an ensemble mean of the trend. According to the result, the ensemble mean indicates a reasonable linear trend of the Arctic Oscillation Index (AOI). Apparently, this trend is caused by the external forcing. Superimposed on the linear trend, each member shows considerable amount of the internal variability with a decadal scale. The deviation from the ensemble mean is examined by the EOF analysis to find the dominant mode of the Arctic Oscillation. It is concluded that the decadal variability of the AOI can be explained by the purely internal variability of the barotropic component of the atmosphere.