



Combined Effects of North Pacific Gyre Oscillation and El Nino-Southern Oscillation on Northeast Asian Climate

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The most dominant variability of upper ocean temperature is Pacific Decadal Oscillation (PDO) in North Pacific. Besides the PDO, one of the important climate variability of upper ocean is North Pacific Gyre Oscillation (NPGO). Combined effects of the NPGO and El Nino on Northeast Asian climate in wintertime are examined in this study. Northeast Asia undergoes relatively warm climate in early winter during El Nino period. One possible reason for the warmer condition in Northeast Asia is warm and moist southerly low level winds due to a large-scale anticyclone over the Kuroshio Extension region during El Nino period. However, the large-scaled anticyclone associated with El Nino is vanished when NPGO mode is active. In this study, possible dynamics for the combined effects of NPGO and ENSO on the Northeast Asian climate, are discussed using reanalysis data and a linear baroclinic model.