



## **Assessing Future Climate Changes in the East Asia due to the RCP scenarios downscaled by Regional Spectral Model**

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This study assesses future climate change over East Asia using the Regional Spectral Model (RSM). The RSM is forced by two types of future climate scenarios produced by the Hadley Center Global Environmental Model version 2 (HG2); the representative concentration pathways (RCP) 4.5 and 8.5 scenarios for the intergovernmental panel on climate change fifth assessment report (AR5). Analyses for the current (1980-2005) climate are performed to evaluate the RSM's ability to reproduce precipitation and temperature. Two different future (2020-2050) simulations are compared with the current climatology to investigate the climatic change over East Asia. The RSM satisfactorily reproduces the observed seasonal mean and variation of precipitation and temperature. The spatial distribution of the simulated large-scale features and precipitation by RSM shows generally improved pattern compared to that is given by the HG2. In addition, their inter-annual variations in Japan are better captured by the RSM. Assessment of future climate changes over the East Asia will be discussed.