

# Analysis of CMIP6 Multi-model Climate Change Simulations and Projections Over Northern Eurasia

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Northern Eurasia has observed an above average increase in surface air temperature over the last century compared to other parts of the world and is the region most sensitive to climate changes as increased temperature has a huge impact on its water and energy cycles and on its ecosystem. This presentation summarizes an analysis of the climate simulations over the period 1901–2014 and climate change projections over the period 2015–2100 under four different Shared Socioeconomic Pathways (SSPs) from 16 global climate models (GCMs) participating in the sixth phase of the Coupled Model Intercomparison Project (CMIP6). Simulations and projections of surface air temperature and precipitation over the study regions were intercompared and were compared to multi-model consensus simulations and projections obtained by Bayesian Modeling Averaging (BMA) method. The results show significant differences among results of individual GCMs and BMA multi-model consensus results are the most reliable when compared to observations in terms of spatial averages and seasonal averages. BMA method is also useful in providing uncertainty information about the projections of future climate changes. Overall, CMIP6 results show an increasing trend in average air temperature over Eurasia.

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