Projected climate change over Kuwait simulated using a WRF high resolution regional climate model

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The purpose of this study is to examine the impact of climate change on the changes on summer surface temperatures between present (2000-2010) and future (2050-2060) over the Arabian Peninsula and Kuwait. In this study, the influence of climate change in the Arabian Peninsula and especially in Kuwait was investigated by high resolution (36, 12, and 4 km grid spacing) dynamic downscaling from the Community Climate System Model CCSM4 using the WRF Weather Research and Forecasting model. The downscaling results were first validated by comparing National Centers for Environmental Prediction NCEP model outputs with the observational data. The global climate change dynamic downscaling model was run using WRF regional climate model simulations (2000-2010) and future projections (2050-2060). The influence of climate change in the Arabian Peninsula can be projected from the differences between the two period's model simulations. The regional model simulations of the average maximum surface temperature in summertime predicted an increase from 1°C to 3°C over the summertime in Kuwait by midcentury.