Geophysical Research Abstracts
Vol. 20, EGU2018-12422, 2018
EGU General Assembly 2018

Future Projection of Air Temperature and Climatology for Cyprus by Using RegCM4.4

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Climate change is the major problem of the world especially for island nations and Cyprus is one of this vulnerable regions. In this study, high-resolution regional climate simulations for the periods of 2011-2040, 2041-2070, 2071-2100 in the seasonal averages of air temperature and precipitation variables with respect to the reference period of 1970 - 2000 were examined for Cyprus. Moreover, Regional Climate Model (RegCM4.3.5) of ICTP (International Centre for Theoretical Physics) was run by using two different global climate models. MPI-ESM-MR global climate model of the Max Planck Institute for Meteorology and HadGEM2 of the Met Office Hadley Centre were dynamically downscaled to 10 km resolution by using double nesting. The emission scenarios RCP4.5 and RCP8.5 of the IPCC (Intergovernmental Panel of Climate Change) are used for projections. The result shows that while the temperature and sea surface temperature will increase, the precipitation will decrease. Obviously this is severely threatening the culture and life of the citizens of the island.