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Future climate changes in Greenland during the 21st century at a 5km resolution using HIRHAM5

Fredrik Boberg

Danish Meteorological Institute, Copenhagen, Denmark (fbo@dmi.dk)

DMI has estimated the expected climate change in Greenland, based on the latest Danish and international scenario calculations, focusing on climate change within this century and the emission scenarios used by IPCC. A large number of climate indices designed for Greenlandish conditions have been calculated using output from the HIRHAM5 regional climate model run at a 5km horizontal resolution.

Climate simulations and understanding of associated uncertainties are constantly being improved. Here we utilize a statistical method on an ensemble of CMIP5 GCMs to assess uncertainties of projected climate change results based on the DMI high resolution regional model. For specific planning, assessment and risk analysis of climate adaptation, it is important to consider the full range of estimates as indicated by the uncertainty interval, instead of simply considering the best estimate.

Climate variability and change are expected to increase towards 2100 in terms of higher temperatures, more winter precipitation, longer growing seasons, reduction of permafrost, more frequent and more extreme weather events and a continuing loss of sea ice.