Geophysical Research Abstracts,
Vol. 10, EGU2008-A-02197, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-02197
EGU General Assembly 2008

Extreme temperatures in climate projections

A. Sterl (1), H. Dijkstra (2), G.J. van Oldenborgh (1), W. Hazeleger (1), and C. Severijns (1)

(1) KNMI, P.O.Box 201, NL-3730 AE De Bilt, The Netherlands (sterl@knmi.nl), (2) IMAU, Utrecht University, P.O. Box 80005, NL-3508 TA Utrecht, The Netherlands (dijkstra@phys.uu.nl)

A 17 member ensemble simulation of climate change in response to the SRES-A1b scenario has been carried out using the ECHAM5/MPI-OM climate model. The relatively large size of the ensemble makes it possible to investigate changes in extreme values of climate variables. We here focus on the annual-maximum 2m-temperature, $T_{\max}$. We fit a GEV distribution to the simulated values and investigate the development of the parameters of this distribution. Over most land areas both the location and the scale parameter increase. Therefore the 100-year return values increase faster than the average temperatures. Over most land areas equatorward of 40° they exceed 50°C. However, a comparison of simulated 100-year return values for the present climate with observations (station data and reanalysis) show that the model overestimates extreme values. This overestimation also occurs in other state-of-the-art climate models. Obviously processes leading to very high temperatures are poorly represented in models.