Geophysical Research Abstracts, Vol. 8, 01080, 2006
SRef-ID: 1607-7962/gra/EGU06-A-01080

The Simulation of the Variability and Extremes of Daily Precipitation over Europe by the HIRHAM Regional Climate Model

W. May

Danish Climate Centre, Danish Meteorological Institute, Copenhagen, Denmark (wm@dmi.dk / Fax: +45 39157460)

In this study the characteristics of daily precipitation as well as of wet and dry spells, i.e., extended episodes with and without precipitation, respectively, in Europe are considered. This is done on the basis of a number of simulations with the HIRHAM regional climate model for the period 1961-1990, namely a small ensemble of three simulations at a horizontal resolution of 50 km and one simulation at a horizontal resolution of 25 km. Furthermore, observed daily precipitation data from the European Climate Assessment and Dataset project for the period 1961-1990 are considered. In addition to some basic properties, extremes of daily precipitation as well as extreme precipitation amounts associated with wet spells are investigated by means of the Generalized Pareto distribution. The main focus of this study is to assess the quality of the simulation of various characteristics of daily precipitation (intensity, frequencies, and extreme daily precipitation) as well as of wet and dry spells (frequency, length, extreme length, and extreme precipitation amounts) in Europe by the HIRHAM regional climate model. This is done by comparing the simulations with the observational data set. By considering simulations at different horizontal resolutions, also the impact of the model's horizontal resolution on the simulation of the aforementioned aspects of daily precipitation is investigated.