Geophysical Research Abstracts, Vol. 8, 05729, 2006
SRef-ID: 1607-7962/gra/EGU06-A-05729

Spatial structure in trends of Scandinavian extreme precipitation during 1961-2004

C. Achberger (1) and D. Chen (1,2)

(1) Earth Science Centre, Göteborg University, Sweden

(2) National Climate Centre, China Meteorogical Administration, China

(christin@gvc.gu.se / Fax: +46 31/7731986 / Phone: +46 31 7732825)

The question whether climate is about to become more extreme has motivated numerous studies in different parts of the world. Currently, research is going on to investigate trends in the surface climate of Scandinavia during the past century. For this purpose, precipitation indices based on daily data from a large number of stations in Sweden and Norway (around 450) were calculated for the period 1961-2004. Among these indices are measures characterizing mean precipitation statistics like the frequency of rain days and the mean precipitation amount of rainy days, as well as various measures for moderate to severe extremes like percentile-based thresholds, maximum precipitation over a certain number of days, maximum number of consecutive wet days and number of very wet days ($\geq$40 mm/day). Existing studies using these or slightly different indices did include a few stations from Nordic countries, however, none of them dealt explicitly with spatial variability of the extreme precipitation due to the small number of stations used. This study focus on spatial structure of the trends for the 10 precipitation indices in Norway and Sweden. The results show that a large number of precipitation stations in Sweden and Norway show increasing trends in several of these indices. Especially, measures of moderate to severe precipitation are increasing at many locations. The magnitude and sign of these trends, however, vary depending on season and region. The spatial structures of different indices are complex and depend on the indices and physiographical settings including topography and shape of coastline.