Geophysical Research Abstracts, Vol. 9, 10659, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-10659

An intercomparison of selected circulation type classifications for the European region

C. Beck (1), A. Philipp (1) and J. Jacobeit (1)

(1) University of Augsburg, Institute of Geography, Universitaetsstrasse 10, D - 86135 Augsburg, Germany, (christoph.beck@geo.uni-augsburg.de)

Within the framework of the EU COST action 733 'Harmonisation and Applications of Weather Type Classifications for European Regions' it is intended to evaluate and compare a variety of existing subjective and objective weather type classifications available for the european regions with respect to various applications and eventually to develop an optimized objective classification approach.

As part of the german contribution to this project two objective (computer assisted) classification approaches are applied to gridded daily MSLP data available from the ERA40 reanalysis data set for the period 1957 to 2002 covering the North Atlantic European region (30N-76N, 37W-58E). In detail the selected computer assisted classification approaches are based on (i) clustering by simulated annealing and diversified randomisation and (ii) objective assignment of daily MSLP fields to essential circulation patterns characterised by specific combinations of the zonal/meridional flow component and vorticity respectively. Additionally the classification into daily 'Grosswetterlagen' according to Hess and Brezowsky as a prominent representative of subjective classification approaches is included into subsequent analyses.

Intercomparison studies on the basis of classification results for the 46-year period comprise the estimation of internal variability of resulting circulation types with respect to dynamic properties and as well European climate characteristics linked to the occurence of certain circulation types. Further investigations focus on the ability of each classification method to capture decadal to multidecadal European climate variations in terms of varying circulation type frequencies.