



Winter atmospheric circulation over Europe and the North Atlantic: an intercomparison of reanalysis datasets

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Research on atmospheric circulation has been quite common lately and includes e.g. analyses of circulation properties and trends in both reanalysis datasets and circulation model outputs. In many cases, however, studies have been restricted to only one set of data and only one research method. The goal of our present work is to compare the properties of winter European atmospheric circulation in five reanalysis datasets (ERA-40, NCEP/NCAR, JRA-55, ERA-20C, and 20CRv2) over 1961–2000. The main research method we use is an automated circulation classification. In order to bring robust results, however, eight distinct circulation type calendars are defined based on the reanalysed daily mean sea level pressure patterns, for each of the reanalyses and over the total of eight European domains. Subsequently, basic properties of these calendars are computed and compared. Lastly, we show how results of GCM validation can vary if different reanalyses are taken as a benchmark.