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Synoptic-scale processes in future climate

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Many modelling studies address the question of circulation changes in future climate. Most of them find an intensification of the Arctic Oscillation, which is connected with a strengthening of the mid latitude storm tracks. Additionally, the number of intensive storms seems to grow (at least in certain regions).

In the present study the synoptic-scale processes are investigated in furher detail, mainly focusing on their space-time behaviour. Two model-runs are used. The first run is performed with the coupled general circulation model ECHAM4/OPYC3 (T42) and the second run is a high resolution time-slice experiment of ECHAM4 (T106). Both experiments follow the IPCC-scenario IS92a.

In these experiments, remarkable differences of the synoptic-scale processes between present-day and future climate concerning their space and time behaviour exist. The position of the major storm tracks, however, is not changed. The results will be compared with reanalysis data.