



## **The atmospheric regime behaviour under future climate projections**

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In order to improve the understanding of climate variability under future climate projections we study the projected low-frequency variability of several IPCC AR4 model simulations. On the basis of the concept of atmospheric circulation regimes, we investigate, how the regime-like behaviour in the Northern hemisphere is influenced by future changes of the external forcing according to IPCC scenarios.

In this study the temporal-spatial patterns of variability are determined and the concept of circulation regimes is applied to monthly winter (DJF) data in the middle troposphere and stratosphere. By comparison of the simulated regime behaviour for the 20th century and for the projections of the 21st century, we study, whether the frequency of fixed regimes changes or new regimes arises due to the changes in the external forcings. Emphasis is put not only on the comparison of hemispheric regimes, but also on sectorial regimes for the Pacific-North American region, the North Atlantic/European region and the Arctic region.