



Climate impacts of the teleconnection patterns are sensitive to how the patterns are defined

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The teleconnection patterns such as the North Atlantic Oscillation (NAO) and Pacific / North American pattern (PNA) strongly affect surface climate conditions, including temperature, precipitation, sunshine duration, and other variables. The effects of the teleconnections are sensitive to the exact definition of the teleconnection pattern. In general, the teleconnections may be quantified as indices calculated from data (both station or gridded) at fixed positions, as indices based on the positions of action centres, which vary in time, and as scores determined by the Principal Component Analysis (PCA). However, in previous studies only the sensitivity to the definition of the NAO index was investigated.

In this contribution, we compare several different definitions of other teleconnection patterns, which have often been employed in recent studies, for their effects (quantified in terms of correlations) on surface temperature and precipitation in winter. The analysis is based on monthly mean data. Several definitions have been used and are available for the PNA and the East Atlantic pattern in the northern Extratropics and for the Southern Annular Mode (sometimes also referred to as Antarctic Oscillation) in the southern Extratropics and these patterns we analyse.