



Seasonal changes in simulated Northern Hemisphere Teleconnection patterns by CMIP3 models

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It is well recognized the importance of teleconnection to explain trend and variations of precipitation, temperature and extreme climate indices. In a previous study, we investigated changes of the Teleconnection Patterns (TP) in winter under warmer conditions. In particular, we obtained results for the TP that have major influence over Europe, the North Atlantic Oscillation (NAO), East Atlantic (EA), East Atlantic/Western Russia (EA/WR) and the Scandinavian (SCAND), finding some results that provide significant trend for the NAO and EA indices. Now, in this study, we investigate the ability of models to simulate the TP in spring, summer and autumn. The results allow us to determine what teleconnection patterns experiment the strongest changes in the corresponding season.

For this purpose we analyze the geopotential at 500hPa (Z500) dataset of Global Climate Models of the World Climate Research Program Coupled Model Intercomparison Project phase 3 (WCRP CMIP3), using two experiments, 20th century (20C3M) and 21st (SRES A1B). In order to obtain the simulated TI we apply Partial Least Square (PLS) regression, where the TP from Climate Prediction Centre (CPC) are the predictors and the standardized monthly Z500 anomalies from models are the predictand. The regression coefficients will be the simulated Teleconnection indices. Regarding the pattern and indices comparison we use different statistical test.