



Winter and summer blocking variability in the North Atlantic region - evidence from long-term observational and proxy data from southwestern Greenland

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We investigate the relationship between the North Atlantic atmospheric blocking and winter and summer temperature variability as derived from long-term observational and proxy records from southwestern Greenland. It is shown that during boreal winter warm (cold) conditions in southwestern Greenland are related with high (low) blocking activity in the Greenland-Scandinavian region. An index for the North Atlantic blocking is significantly correlated with an oxygen isotope record from Greenland ice cores suggesting a possible reconstruction of blocking variability in this region during past millennium. During summer, high (low) blocking activity in the Euro-Atlantic region is associated with cold (warm) conditions in southwestern Greenland.

We conclude that the combination of high resolution (daily) atmospheric circulation data sets and long-term seasonally resolved climate variables allows to obtain relevant information about blocking activity during past periods. The reconstruction of synoptic scale activity from long-term observed and proxy data can provide a better interpretation of the connection between proxy data and atmospheric circulation variability than the traditional atmospheric teleconnection approach, based on seasonal or annual averages.