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# Atmospheric Teleconnections under High and Low Solar Activity

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It is already known that the geographical extent of the North Atlantic Oscillation is considerably larger in years with a high solar activity. We extend the investigation to other modes of low-frequency circulation variability (i.e., teleconnections) in the Northern Hemisphere in winter by comparing the area influenced by the modes between the years (months) with a high and low solar activity. Both the point correlations and principal component analysis are used to define the modes. The sensitivity of results to the definition of high and low activity months is examined. Specifically, we address whether the maximum or minimum years (months), or both, can be distinguished from the average ones, that is, whether the difference in the spatial extent stems predominantly from the solar maxima or solar minima, or both the maxima and minima contribute to the difference. Analyzed is the period 1950-2002, atmospheric circulation is characterized by 500 hPa geopotential heights, and solar activity by the 10.7 cm radio flux.