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Impacts of soil moisture and snow on temperature trends in Europe

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In this contribution we analyze the seasonality of the European warming and its spatial patterns. They are found to exhibit distinct and systematic characteristics and in some regions contradict trends found at the continental scale, for example the stronger warming of winter compared to summer. Several potential drivers of these patterns are investigated, including soil moisture and snow. It is found that for certain regions these drivers are relevant for the observed patterns of temperature change. Our analysis reveals that a seasonal perspective on the drivers is necessary in order to understand their link to the temperature patterns. These results can also be helpful in understanding several shortcomings of current GCMs.