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Observed snowfall and river discharge trend and low-frequency variability over Alps

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We present a twofold analysis of long-term trend and variability of different factors affecting the hydrological cycle over the Alps in spring. The study is based on datasets derived from observations for the last 150 years. In one case we focus on snowfall flux, which we found shifting between two different regimes in concert with the Atlantic Multidecadal Oscillation. This teleconnection is explained by a mixture of changes in circulation and by local climatic feedbacks. Moreover, we analyzed the timing of the river discharge peaks relative to the main Alpine rivers, finding similar features of low frequency variability, and a common anticipation tendency of more than two weeks per century, probably explained by a change of seasonality of total precipitation.