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The impact of climate variability and seasonal characteristics on flood occurrence in north-eastern Italy

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The aim of this work is to analyse the impact of climate variability and seasonal characteristics in the long-term regimes of extreme precipitation and floods in catchments located in north-eastern Italy. We use seasonality indices, climate variability indexes (NOA and WMO) and atmospheric circulation patterns to isolate the sources of variability on flood-inducing processes. This is supported by cluster analyses to identify areas of similar flood processes, both in terms of precipitation forcing and catchment processes. The results allow to isolate regions of similar flood generation processes, effects of soil moisture seasonality due to evaporation and effects of soil moisture seasonality due to snow melt. It is argued that the synoptic approach proposed here is valuable in both flood analysis and flood estimation.