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Meteorological based analysis of Italian hydrological extreme-events: 1958-2008.

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Extreme precipitation events, although localized, are clearly included in a broader meteorological context which feeds them in energy and moisture.
Extreme events should be analyzed as a consequence of a meteorological dynamic mechanism, at synoptic/meso-scale, that extracts and conveys moisture, and a small scale process, often ruled by the local orography, triggering deep convection. For an exhaustive analysis of hydrological extreme events, a coupling between meteorological and hydrological data is desirable.
In this work we intend to identify and characterize the main meteorological configurations that produce extreme precipitation in Italy, identified as the highest maximum annual rainfall, trying to extrapolate the orographic influence that can locally amplify the meteorological effects.
Meteorological data for the synoptic/meso-scale analysis are provided from the ECMWF (European Center for Medium-Range Weather Forecasts) data-base.
Rainfall data are taken from SIVAPI (informative system for flood evaluation) data-base, containing daily rainfall from the 1958 for the whole italian territory.