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Heatwaves detection, clustering and future projections

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Impacts of heatwaves on infrastructure,particularly nuclear power plants, can be significant and is brought to evolve in the future. As part of the project SEEN (scenario extreme nuclear energy), we evaluated, both in reanalysis and in a set of 10 Euro-Cordex simulations, the frequency and distribution of heatwaves.
The results shows the ability of models, GCM associated with RCM, to represent historical events, in terms of frequency and patterns. The study was accompanied by the elaboration of a metric value to assess the ability of a model to correctly represent the classifications and determine the number of significant cluster for reanalysis and climate projections. The increase in frequency and duration of these events varies from one data set to another, but indicates preferential tendency for the various European regions.