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Influence of external forcings on the hydroclimate conditions in the Europe-Mediterranean Region over the Common Era : a model/data approach

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The climate system has been largely influenced by emerging anthropogenic forcing effects during the last decades of the historical period. Hence, the historical simulations may not be the most appropriate ones to constrain the internal climate variability at such long time scales. The last 2000 years provide a promising time frame constrained by climate reconstructions to explore the interactions between external forcings and the internal dynamics of climate. The Common Era is indeed relatively long and forcings are reasonably well reconstructed and physical processes modelled. In this contribution, we use IPSL-CM6A-LR model simulations covering the last 1500 years (500AD to Present Day) and available paleo-proxy reconstructions to study the influence of the internal variability and external forcing on climate variability in the North Atlantic at decadal-to-multi-decadal time scales and the impacts on the hydro-climate conditions evolution over Europe-Mediterranean sector.