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European summer hot temperatures events and the atmospheric circulation during the last Millennium

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The European summer heatwaves have been increasing in frequency and magnitude in the past decades. The last millennium is well documented in terms of climate forcings. Modelling efforts have provided a wealth of climate simulations covering the last millennium. We want to exploit such data in order to assess how models simulate extreme summer events.

We focus on five model outputs of the past Millennium experiment from CMIP5 (Coupled Model Intercomparison Project phase 5). We use temperature and sea level presure daily data to compute the heat events and the summer weather regimes. We discuss and present the results comparing the occurrence of specific weather regimes during heats events over Europe in the last Millennium. For the recent past, we also compare the historical simulation outputs with some reanalysis datasets (20CR, ERA20C).