

Central European summer temperature variability to increase

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More extreme heat waves have been observed in central Europe in recent years as summer temperature variability has increased on both daily and interannual timescales. Models project that as the climate warms throughout the 21st century, this increased variability will continue.

To evaluate the [robustness](#) of those previous findings, which are based on regional climate models from the Prediction of Regional Scenarios and Uncertainties for Defining European Climate Change Risks and Effects (PRUDENCE) project or a small sample of models from the ENSEMBLES project, Fischer et al. revisit model projections using the full set of ENSEMBLES regional climate models. These models cover a larger uncertainty range than previous studies. They note that PRUDENCE regional climate models are all driven by the same global climate model, while ENSEMBLES regional climate models are driven by six different [global climate models](#).

They find that PRUDENCE models all projected a substantial increase in interannual summer [temperature variability](#) in central Europe by the end of the 21st century, while different ENSEMBLES models projected different amounts of interannual [summer temperature](#) variability, with the mean of ENSEMBLES models projecting no clear increase. However, those ENSEMBLES models that most realistically represented present-day interannual summer temperature variability did project an increase in temperature variability over central Europe by the end of the 21st century. Under the assumption that a model with a better representation of the present-day conditions provides a more credible

estimate of future changes, the reduced set of well-performing models yields a robust projection.

The study also indicates that the largest increases in interannual summer temperature variability would occur mainly in the central European region that is a [transition zone](#) between dry climates in the south and moist climates in the north. They also find that all ENSEMBLES regional climate models project an increase in daily summer temperature variability over [central Europe](#). They emphasize that hot extremes are expected to warm more strongly than the summer mean temperature.

More information: Changes in European summer temperature variability revisited, *Geophysical Research Letters*, [doi:10.1029/2012GL052730](https://doi.org/10.1029/2012GL052730), 2012

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