



Large uncertainties in projected European summer warming and drying due to ocean-atmosphere and land-atmosphere interactions

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Europe is among the regions with the highest summer warming rates and largest spread in the projected warming in the latest CMIP5 climate model projections. The end-of-this-century summer warming under the RCP8.5 scenario ranges from about 3 to 9 degrees. Why do models disagree so much on the response of the summer climate in Europe to an increase in greenhouse gas concentrations?

The origin of these uncertainties is traced through a combination of statistical analyses, theoretical arguments and additional model simulations to both the uncertain response of the ocean circulation to the warming and land-atmosphere interactions in continental Europe.