



“Attribution of changes in extreme weather risk: a study of the European Summer 2003 Heatwave”

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In 2003 the average summer temperature in continental Europe exceeded the 1961-1990 European summer mean by 2.3K. Many regions experienced a large number of deaths due to the elevated temperatures, and attribution studies have determined that human activity have at least doubled the risk of such a heatwave compared to pre-industrial times. However, other, non-linear processes could also have amplified summer 2003 temperatures: feedbacks between reduced cloud cover and precipitation and reduced soil-moisture may have prevented the usual convective disruption of the high pressure system. This study will build on previous attribution work by attempting to further isolate the change in risk of the heatwave due to anthropogenic influences. A large ensemble of the ECMWF IFS model will be performed at higher resolution than previous studies, with improved simulation of land surface processes.