

12.07.2018, 15:15

# KlimaCampus Kolloquium

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## Understanding regional weather extremes in a changing climate

Regional weather extremes often have severe impacts on society and ecosystems. There is evidence that the character of events such as heatwaves or heavy precipitation has been changing already in response to anthropogenic global warming, and will continue to change. Yet our ability to simulate these changes is limited. In particular regional information about future extremes is affected by substantial uncertainties. These uncertainties stem from mainly four sources: internal climate variability fundamentally limits the signal to noise ratio of climate projections, in particular at the regional scale. Current generation general circulation models have too coarse a resolution to realistically represent large-scale circulation features associated with extreme events, and their response to climate change. Local extreme events such as deep convection are not resolved by standard regional climate models. And finally, climate model output is typically biased, but the correctability of many model biases is limited.

This presentation illustrates these uncertainties in the light of the planned IPCCs 6th assessment report, and proposes ways forward to distill credible information for decision making, involving the construction of physically consistent storylines, high resolution regional climate modeling, sensitivity studies of individual events, and approaches to postprocess climate model biases.

**Douglas Maraun from the Karl-Franzens-Universität, Graz is guest Detlef Stammer (Universität Hamburg).**

**Bundesstraße 53, Room 22/23 (ground floor)**