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CLIM Program Transition Workshop
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Lecture: *Climate Extreme and Max-Stable Processes*

Speaker: Raphaël Huser

Abstract:

Extreme environmental events such as droughts, floods and heat-waves take place in space and time, and it is necessary to take this into account when evaluating their risks and estimating their probabilities. During this lecture, I will review recent work on this topic, focusing on max-stable processes, which are the natural extension of univariate extreme-value models for more complex spatial phenomena. The most widely-used max-stable models, the Brown–Resnick and extremal-t processes will be described, followed by a brief overview of other types of models and of approaches to inference based on high threshold exceedances, with an emphasis on likelihood-based methods. The ideas will be illustrated by applications to heavy rainfall close to Jeddah and to high temperatures in the region of Madrid.