

# An Overview of Spatial Extremes

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Statistics of extremes concerns the modelling of rare events, usually with the goal of estimating the probabilities of events that have not yet been observed. Such events necessarily lie in or beyond the tail of any available data, so some means of extrapolating their values from existing observations is needed, and of course this is a hazardous enterprise. Its foundations were laid 90 years ago, when Fisher and Tippett [6] derived classical limiting distributions for maxima of independent random variables. Around 50 years later, analogous results for the process setting were discovered [1, 5, 4], but apart from isolated efforts [7, 2, 3] there was little statistical work on extremes in spatial and space-time settings. The widespread availability of suitable data and the need to estimate risks stemming from the likely impacts of climate change have made spatial modelling of extremes both feasible and desirable, and the area has seen rapid development over the past decade or so. In this talk I shall give an overview of the topic, based on recent work with colleagues. Apart from obvious concerns about the difficulty of extrapolating a joint distribution from limited data, key elements are max-stable processes, changes in the intensity of extreme events with their rarity, and the need to balance accurate modelling of marginal and joint distributions.

## Références

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