

Speaker: Kirstin Storkorb (University of Bath)

Date: 17/10/2025 at 13:15 in 4 West 1.7 (Wolfson Lecture Theatre)

Title: Comparative evaluation of point process forecasts

Abstract:

Stochastic models of point patterns in space and time are widely used to issue forecasts or assess risk, and often they affect societally relevant decisions. We adapt the concept of consistent scoring functions and proper scoring rules, which are statistically principled tools for the comparative evaluation of predictive performance, to the point process setting, and place both new and existing methodology in this framework. With reference to earthquake likelihood model testing, we demonstrate that extant techniques apply in much broader contexts than previously thought. In particular, the Poisson log-likelihood can be used for theoretically principled comparative forecast evaluation in terms of cell expectations. We illustrate the approach in a simulation study and in a comparative evaluation of operational earthquake forecasts for Italy.

Joint work with Jonas R. Brehmer, Tilmann Gneiting, Marcus Herrmann, Warner Marzocchi and Martin Schlather.