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*A new shape of extremal clusters for certain stationary semi-exponential processes with moderate long range dependence*

Extremal clusters of stationary processes can be quite intricate if the process has long memory affecting its tails. They can become random fractals, taking the shape of the stable regenerative set for certain stationary infinitely divisible processes with subexponential tails, including both power-like tails, and certain lighter tails, of which lognormal-like tails are an example. In this work we show that if the tails of the process are even lighter, specifically semi-exponential-like tails, then a new shape of extremal clusters arises, in which each stable regenerative set supports a random panoply of varying extremes.

The talk is based on joint work with Zaoli Chen.