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25. Januar 2010

Einladung zum Vortrag

von

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UNIVERSITÄT ULM

Extremes of independent Gaussian processes

A stochastic process is called *max-stable* if the maximum of any finite number of independent copies of the process, taken pointwise, has the same distribution as the process itself up to an affine transformation. Max-stable processes appear as limits of maxima of n i.i.d. stochastic processes as n goes to infinity. In this talk we will be interested in a particular case of this setting: we will consider max-stable processes appearing as limits of maxima of independent *Gaussian* processes. The class of limiting processes will be completely described and its properties will be discussed. The limiting processes are related to a certain class of systems of "competing" particles. The starting positions of the particles are chosen according to a Poisson point process with intensity e^{-x} , and then the particles move independently according to the law of a fractional Brownian motion with some special negative drift. The position of the "leading" particle in such a system is a max-stable stochastic process. We will show that this process is stationary and appears as one observes a large number of stationary Gaussian processes near their extremes. We also discuss α -stable processes related to the particle systems mentioned above and show that they appear as limits of sums of independent geometric Brownian motions. This last problem is motivated by the Random Energy Model of statistical physics.

Termin: Mittwoch, 27. Januar 2010, 14:30 Uhr

Ort: Universität Ulm, Helmholtzstr. 18, Raum E60

Der Vortrag findet im Rahmen unseres Forschungsseminars statt.
Interessenten sind herzlich eingeladen.

gez. V. Schmidt, E. Spodarev