On extremes and central limit theory for random fields

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Abstract

In this talk we plan to discuss some aspects of extreme value theory for random fields along with the central limit problem for functionals defined above high levels. The former topic includes a general version of the classical "extremal types theorem" and the latter leads to Compound Poisson and normal limits depending on the rate of increase of the level.

The dependence decay requirements will be "minimized" by the use of "Coordinate-wise Mixing" (introduced by H. Rootzén and known informally as "Holger Mixing"). This replaces one restrictive dependence condition by potentially weak individual conditions in each coordinate direction.