



Einladung zum Vortrag

von

27. Januar 2014

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Modeling and characteristics of random sets with implicit marking

In this talk spatial point processes and random sets are discussed, where geometrical marks such as size and orientation of geometrically structured objects become a part of the reference process model. Global characteristics of the random sets are called functionals, where U-statistics are a frequently investigated special case.

Consider a finite spatial point process with a density w.r.t. a Poisson point process. Using the difference operator and the L2 expansion of the mean of a product of two functionals of the Poisson process, we obtain a general formula for moments of functionals. For U-statistics the expansion is finite which enables us to get more explicit formulas including conditional intensities. We apply the general theory to interacting segment processes in the plane and to surface processes in the three-dimensional space. Surfaces are circular plates and natural U-statistics are the total area, the total length of intersections and the total number of intersection points of triplets. In the case of parametric models some limitations on the parameter space are indicated.

Some related issues will also be addressed, namely central limit theorems, relationships between the components of the model and the role of random fields.

Termin: Dienstag, 4. Februar 2014, 9:00 Uhr

Ort: Universität Ulm, Helmholtzstr. 22, Raum 202

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

gez. V. Schmidt