Karlsruher Institut für Technologie

Institut für Stochastik

Einladung zu einem Vortrag in der

AG STOCHASTIK

am Dienstag, 28.11.2023, um 15.45 Uhr.

Prof. Dr. Siegfried Hörmann

TU Graz

spricht über das Thema

Measuring dependence between a scalar response and a functional covariate

We extend the scope of a recently introduced dependence coefficient between scalar responses and multivariate covariates to the case of functional covariates. While formally the extension is straight forward, the limiting behaviour of the sample version of the coefficient is delicate. It crucially depends on the nearest- neighbour structure of the covariate sample. Essentially, one needs an upper bound for the maximal number of points which share the same nearest neighbour. While a deterministic bound exists for multivariate data, this is no longer the case in infinite dimensional spaces. To our surprise, very little seems to be known about properties of the nearest neighbour graph in a high-dimensional or even functional random sample, and hence we try to advise a way how to overcome this problem. An important application of our theoretical results is a test for independence between scalar responses and functional covariates.

The talk is based on joint work Daniel Strenger.

Ort: SR 2.059 (Geb. 20.30)

Die Dozentinnen und Dozenten der Stochastik