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FAKULTÄT
FÜR MATHEMATIK, INFORMATIK
UND NATURWISSENSCHAFTEN

Fachbereich Mathematik

Kolloquium über Mathematische Statistik und Stochastische Prozesse

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Discrete Statistical Models with Rational Maximum Likelihood Estimator

A discrete statistical model is a subset of a probability simplex. Its maximum likelihood estimator is a retraction from that simplex onto the model. For which models is this retraction a rational function? First of all, they are all (semi-)algebraic sets, so we are in the domain of real algebraic geometry. Building on results by Huh and Kapranov on Horn uniformization, I give a characterization of such models and demonstrate it on examples. Joint work with Eliana Duarte and Bernd Sturmfels.

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