Lothar-Collatz-Kolloquium für Angewandte Mathematik

Donnerstag, den 17. April 2025, um 17:15 Uhr, im Hörsaal 5

Prof. Dr. René Henrion*
(Weierstraßinstitut für Angewandte Analysis und Stochastik, Berlin)

Chance Constraints in Optimal Control

Zusammenfassung/Abstract:

Chance constraints represent a major tool in stochastic optimization when dealing with random inequality constraints. They allow one to find optimal decisions satisfying the inequality constraints with high probability. Introduced originally in the context of operations research (finite dimensional optimization) with applications among others to water reservoir mangement or blending problems, they have recently attracted much attention in optimal control, in particular risk-averse PDE-constrained optimization. The talk addresses applications (gas transport, optimal dispatch of mini-grids), algorithmic aspects (spherical-radial decomposition of elliptically distributed random vectors) and theoretical results (optimality conditions, existence of solutions) related with chance constraints in optimal control.

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