Kolloquium über Mathematische Statistik und Stochastische Prozesse

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Symmetric Equilibria in Stochastic Timing Games

Abstract:

We construct subgame-perfect equilibria with mixed strategies for symmetric stochastic timing games with arbitrary strategic incentives. The strategies are qualitatively different for local first- or second-mover advantages, which we analyse in turn. When there is a local second-mover advantage, the players may conduct a war of attrition with stopping rates that we characterize in terms of the Snell envelope from the theory of optimal stopping. This is a very general result, but it provides a clear interpretation. When there is a local first-mover advantage, stopping typically results from preemption and is abrupt. Equilibria may differ in the degree of preemption, precisely when it is triggered or not. We develop an algorithm to characterize when preemption is inevitable and to construct corresponding payoff-maximal symmetric equilibria.

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