

Large deviations and Stochastic stability in games

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Abstract:

Stochastic stability theory in games is concerned with understanding the long-run behavior of learning dynamics in games under small perturbations. Various notions of stochastic stability have been introduced in the literature. In this talk I present a new and general analysis for stochastic stability in the small noise and the large population limit. Our approach combines ideas from Large deviations and optimal control theory to give a unified and robust definition of stochastic stability in games with large player sets and general noisy best-response dynamics. The papers on which this talk is based on joint work with Michel Benaim and William H. Sandholm.