Markov Stationary Equilibria in Stochastic Supermodular Games with Imperfect Private and Public Information

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Abstract: We study a class of discounted, infinite horizon stochastic games with public and private signals and strategic complementarities. Using monotone operators defined on the function space of values and strategies (equipped with a product order), we prove existence of a Stationary Markov Nash Equilibrium via constructive methods. In addition, we provide monotone comparative statics results for ordered perturbations of our space of stochastic games. We present examples from industrial organization literature and discuss possible extensions of our techniques for studying principal-agent models.

Keywords: stochastic games, supermodular games, incomplete information, short memory (Markov) equilibria, constructive methods

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