ÇANKAYA UNIVERSITY

Department of Mathematics

SEMINAR

Two player Nonzero-sum Game via Stochastic Optimal Control

Speaker: Dr. Emel Savku

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Abstract: We develop an approach for two-player constraint nonzero-sum stochastic differential games, which are modeled by Markov regime-switching jump-diffusion processes. We provide the relations between a usual stochastic optimal control setting and a Lagrangian method. In this context, we prove corresponding theorems for two different types of constraints, which lead us to find real-valued and stochastic Lagrange multipliers, respectively. Then, we illustrate our results for a nonzero-sum game problem with the stochastic maximum principle technique. Our application is an example of cooperation between a bank and an insurance company, which is a popular, well-known business agreement type called Bancassurance.