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## Compact domain approximation of the long-run impulse control with multiplicative functional

Tuesday, August 13, 2024 10:00 AM (30 minutes)

Impulse control provides a versatile framework for applying discrete-type interventions in continuous-time phenomena. This type of control can be applied e.g. to design foreign exchange intervention policies, specify optimal harvesting schemes, and model portfolios with transaction costs. In this talk we will discuss a compact domain approximation of the long-run impulse control problem for Feller-Markov processes with multiplicative optimality functional. The solution to the associated Bellman equation is constructed with the help of the Krein-Rutman theorem applied to the discrete time bounded state space version of the problem. The talk is based on a joint work with Łukasz Stettner [1].

[1] D. Jelito, Ł. Stettner, (2023), "Asymptotics of Impulse Control Problem with Multiplicative Reward", Applied Mathematics and Optimization 88(24)

Authors: JELITO, Damian (Jagiellonian University); STETTNER, Lukasz (Institute of Mathematics PAS)

Presenter: JELITO, Damian (Jagiellonian University)

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