Contribution ID: **67**   Type: **Minisymposium Contribution**

Asymptotics and stability of long run stochastic control problems

Wednesday, August 14, 2024 10:00 AM (30 minutes)

In the talk for discrete time controlled Markov processes dependence of the long run functionals: average reward per unit time and risk sensitive, with respect to Markov controls, functions in the functional and risk factor (in the case of risk sensitive functionals) will be studied. It is shown that under nice ergodic assumptions we have suitable continuity properties. Such properties justify the use of Monte Carlo methods to look for nearly optimal controls (in particular when dimension of the model is relatively large). They play also crucial role when we study long run problems with general discounting and want to show that optimal control for long run undiscounted functionals is nearly optimal control for generally discounted long run problems. The talk will be an extension of the papers [1] and [2].

References:

[1] L. Stettner, Stability of long run functionals with respect to stationary Markov controls, submitted to CDC 2024,

[2] L. Stettner, Long run stochastic control problems with general discounting, to appear in AMO, arXiv:2306.14224

Author: Prof. STETTNER, Lukasz (Institute of Mathematics PAS)

Presenter: Prof. STETTNER, Lukasz (Institute of Mathematics PAS)

Session Classification: MS 09: Stochastic Modeling and Control

Track Classification: Minisymposia: MS 09: Stochastic Modeling and Control