

AMA Seminars

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Topic 1

Mean-field team with general state equations and input constraint

Date | Time

27 December 2024 (Friday) | 8:30pm – 9:15pm (HK Time)

Meeting ID | Password

838 9486 4224 | 1227

Zoom Link

<https://polyu.hk/IbxOj>

Abstract:

We investigate stochastic team optimization of large-scale system, in linear-quadratic-Gaussian framework. Concretely, the underlying large-scale system involves considerable weakly-coupled cooperative agents for which the individual admissible controls: (i) enter the diffusion terms, (ii) are constrained in some closed-convex subsets.

We will give the details of the person-by-person optimality principle and the construct of an auxiliary control problem based on decentralized information. The decentralized social strategy is then derived by a class of new consistency condition systems, which are mean-field-type forward-backward stochastic differential equations (FBSDEs) with projection mappings.

Topic 2

Bang–bang control for a class of optimal stochastic control problems with symmetric cost functional

Date | Time

28 December 2024 (Saturday) | 8:30pm – 9:15pm (HK Time)

Meeting ID | Password

884 1882 5069 | 1228

Zoom Link

<https://polyu.hk/hmcjr>

Abstract:

We apply the method of backward stochastic differential equations (BSDEs) to study the bang–bang optimal stochastic control problem, where the optimal control is of the feedback form and the final cost functional is given by a symmetric function. In addition to obtaining the existence of the optimal control, we also give the explicit representation of the optimal control and the optimal value function of the stochastic control problem by the explicit solution of nonlinear BSDEs with symmetric terminal condition.

ALL ARE WELCOME