April 7 (Friday), 2023
3:30pm-4:30pm
KAP 414

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Turnpike Properties for Stochastic Linear-Quadratic Optimal Control Problems

Abstract: For deterministic optimal control problems in very large time horizons (either finite dimensional or infinite dimensional), under proper conditions, the optimal pair will stay near a solution of a proper static optimization problem. Such a phenomenon is called the ``turnpike'' property. The proper static optimization problem usually is the one with the objective function being the running cost rate function and with the constraint being the equilibria of the vector field of the state equation. However, for stochastic problems, mimicking the idea of the deterministic problems will lead to some incorrect conclusions. In this talk, we will look at stochastic linear-quadratic optimal control problem in large duration. We will correctly formulate the proper static optimization problem and establish the turnpike properties of the corresponding stochastic linear-quadratic problem.

Zoom Link: Probability Seminar/Math Finance Colloquium
Time: Apr 7, 2023 03:30 PM Pacific Time (US and Canada)

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