Singular perturbations in ergodic control

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The ergodic control or 'long run average' control problem is considered for diffusions with two time scales. It is shown that under suitable hypotheses, it can be approximated by an ergodic control problem for the slow time scale process alone, with an averaged dynamics in which the controlled ergodic occupation measures for the fast process form the control set. This also has implications for infinite horizon risk-sensitive control, which maps to an ergodic two person stochastic dynamical game after the 'log' transformation.

This is a joint work with V. Gaitsgory, K. Sureshkumar.

`List of invited speakers` `Schedule for December 11`