

## **Robust control of a risk-sensitive performance measure**

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Using the variational formula that relates relative entropy and exponential integrals, one can formulate an optimization problem whose solution provides controls that are min/max optimal for a family of models and with respect to an ordinary performance measure. The family can be viewed as a perturbation of a nominal or design model, with distances measured by relative entropy. In this talk, we describe a generalization to the situation where the performance measure is a risk-sensitive functional, i.e., a quantity largely determined by tail properties. The generalization is based on variation formula involving Renyi divergence. To illustrate we consider the problem of optimal scheduling for an uncertain queueing system.