

Control Group Seminar
Tokyo Institute of Technology

Design under Uncertainty: A Probabilistic Approach

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Dr. Fabrizio Dabbene

Senior Researcher,

CNR-IEIT, Italy



Abstract:

Coping in an efficient way with uncertainty represents one of the key issues in modern control design. In recent years, a novel approach based on probability and randomization has emerged to synergize with the standard deterministic methods for control of systems with uncertainty. In this lecture, we will show how the right combination of uncertainty randomization and convex optimization can lead to design solutions which are reliable, without being overly conservative. We will analyze the main technical tools at the basis of randomized algorithm for control, and provide a brief overview of different applications areas, ranging from anti-windup design, to robust model predictive control and smart grid and multi-stage optimization.
