Scenario-based stochastic model predictive control of nanogrids

Vahid Hamdipoor*[1], Bouchra Mekhaldi , Johan Parra , Jordi Badosa , and Hoai-Nam Nguyen

[1]Telcom Sud Paris, Institut Polytechnique de Paris – TELECOM SudParis – France

Résumé

In microgrids and nanogrids, problems arise from the inherent intermittency of renewable energy sources and the necessity to satisfy the uncertain user energy demand. To deal with these uncertainties, in this paper we study the scenario-based Model Predictive Control (MPC) of a real lab-scale Photovoltaic (PV) based nanogrid. We compare our results with the results of the deterministic MPC with perfect knowledge of uncertainties.

*Intervenant