



北京大學
Peking University

报告地点: 王克桢楼1003

时间: 12月22日 10:00 - 11:30

COOL RESEARCH

系列报告第十八讲

报告人: Lucien Werner (加州理工大学博士后)

报告题目: Pricing Uncertainty in Stochastic
Multi-Stage Electricity Markets

Control, Optimization, Operations research, and Learning (COOL) Research Seminar是由北大工学院相关领域的几位老师发起, 旨在为国内外青年学者提供一个交流平台, 分享和探讨最新最有趣的研究成果, 促进领域内和跨领域沟通学习, 推动前沿理论的发展。





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Pricing Uncertainty in Stochastic Multi-Stage Electricity Markets

Abstract: This talk presents a pricing mechanism for multi-stage electricity markets that does not explicitly depend on the choice of dispatch procedure or optimization method. The approach is applicable to a wide range of methodologies for the economic dispatch of power systems under uncertainty, including multi-interval dispatch, multi-settlement markets, scenario-based dispatch, and chance-constrained dispatch policies. We prove that the pricing scheme provides both ex-ante and ex-post dispatch-following incentives by simultaneously supporting per-stage and ex-post competitive equilibria. In addition, we establish a price decomposition into components corresponding to energy, intertemporal coupling, and uncertainty.



Speaker: Lucien Werner (Postdoc at Caltech)

Biography: Lucien is a postdoc at Caltech specializing in power systems analysis. He obtained his PhD in Computing & Mathematical Sciences in 2023 under the supervision of Professor Steven Low. Currently, his research focuses on electricity market design and optimal bidding strategies for market participants, as well as tools for sensing and modeling in distribution grids. He completed bachelor's studies at Harvard University and a master's degree at Northwestern University.

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