

SEMINÁRIO

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Title: Bilateral Contracting in Multi-agent Electricity Markets

Abstract:

Electricity markets (EMs) are systems for effecting the purchase and sale of electricity using supply and demand to set energy prices. Two key objectives of EMs are ensuring a secure and efficient operation and decreasing the cost of electricity utilization. To achieve these goals, three major models have been considered: pools, bilateral contracts, and hybrid models.

Multi-agent systems (MAS) represent a relatively new and rapidly expanding area of research and development. MAS can deal with complex dynamic interactions and support both artificial intelligence techniques and numerical algorithms. In this way, a multi-agent approach in which software agents are capable of flexible autonomous action in order to meet their design objectives is an ideal fit to the naturally distributed domain of a deregulated energy market.

This talk describes the key concepts of software agents and presents an EM simulator enabling market participants to negotiate the terms of forward bilateral contracts, consider dynamic pricing tariffs, and reach (near) Pareto-optimal agreements.