The Mathematics of Energy Markets

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Timetable: 12 hrs. First lecture on May 4th, 2023 09:00, (dates already fixed, see Calendar of Activities at https://dottorato.math.unipd.it/calendar), Torre Archimede, Room 2BC30.

Course requirements:

- Knowledge of the basic concepts of stochastic processes.
- Knowledge of basic mathematical finance could be helpful but not required.

Examination and grading: Seminar.


Course contents: The program (with emphasis on the mathematical sophistication) will be fixed with the audience according to the mathematical level of the students. A tentative list of contents is the following:

- An overview of financial and energy markets. Basic contracts (forwards, call and put options) and their evaluation.
- Structured contracts: swing and virtual storage contracts.
- Stochastic control and evaluation of structured contracts.
- Optimal installation of power plants and impulsive/singular control.