CIRRELT

Séminaire du CIRRELT Seminar

Cristian Aguayo Quintana

Étudiant PhD Student

Université Libre de Bruxelles, Belgique/Belgium

Unit Commitment Problem with Uncertain Demand and Renewable Energy Availability

Abstract: Energy generation is an area where four of the many problems facing humanity today - the energy crisis, climate change, scarcity of natural resources and global warming interact in a vicious circle. In this scenario, it is not surprising that governments around the world are reviewing their energy policies. Agents such as Renewable Energy Sources (RES) and Local Energy Communities (LEC) can play a fundamental role in the energy transition. However, the optimization of operational costs continues to be a relevant factor. The Unit Commitment (UC) problem is one of the classical approaches to optimize these costs. This problem involves decisions related to the schedule of generating units as well as the power they must produce in order to meet the total power demand, where the last one can be deterministic or uncertain. By integrating RES, a new source of uncertainty is added to the problem.

In this work, various formulations for the UC problem in both the deterministic case and the case under uncertainty are presented and solved using benchmark data.

Note: Cristian Aguayo Quintana will be visiting CIRRELT from February 19 until February 23, 2024, to work with Pr Michel Gendreau. This research visit is being possible through a Québec-Wallonie-Belgique cooperation project.

Mardi / Tuesday

20 février 2024, 10 h 30
February 20, 2024, 10:30

Pavillon André-Aisenstadt
Salle / Room 5441

Ouvert à tous / Open to all

Responsable / Organizer

Michel Gendreau