



SOUTENANCE DE THESE THESIS DEFENSE

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Unité de Recherche : **Laboratoire Heudiasyc, Labex MS2T**

soutiendra sa thèse de **Doctorat** sur le sujet :

**The project scheduling problems with storage resources,
optimization and robustness**

A l'Université de Technologie de Compiègne

Le jeudi 20 octobre 2016 à 10h30

Amphi L103 – Centre Pierre Guillaumat

Devant le jury composé de :

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Abstract :

This thesis investigates the Extended Resource Constrained Project Scheduling Problem (ERCPSP). ERCPSP is a general scheduling problem where the availability of a resource is depleted and replenished at the occurrence times of a set of events. It is an extension of the Resource Constrained Project Scheduling Problem (RCPSPP) where activities are replaced by events, which have to be scheduled subject to generalized precedence relations.

We are interested in this thesis in proposing new methodologies and approaches to solve ERCPSP. First, we study some polynomial cases of this problem and we propose a dynamic programming algorithm to solve the parallel chain case. Then, we propose lower bounds, mixed integer programming models, and a branch-and-bound method to solve ERCPSP. Finally, we develop an instance generator dedicated to this problem.

Key Words: Scheduling problem, nonrenewable resource, lower bounds, branch-and-bound, linear programming, dynamic programming

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