

# Ph.D position in Operations Research

Ecole des Mines de Nantes, IRCCyN, Nantes, France

sept-oct 2011

A Ph.D position in Operations Research is open at the Ecole des Mines de Nantes (France). The topic is “A generic method for the rich optimization problems in supply chain design and strategic location”.

## Background

Supply chain network design has been the subject of many works in operations research. The question of the location of sites is often the core of these problems. The current concerns of industry and the state of the art scientific work show the importance of models which integrate several echelons of the supply chain network. These mathematical models are network-based logistics, multi-product and multi-level. They incorporate the notion of uncertainty: uncertainty of customers demand and costs, the risk of rupture in the supply chain. Finally the only optimization criterion adopted in past research is often the cost. The quality of service or the objectives of sustainable development have also a full role in the problems addressed.

This thesis is part of a multidisciplinary research project funded by the regional council of “Pays de la Loire” in France.

## Subject

The objective of this research is to develop an optimization method flexible enough to deal with several rich models of location and strategic planning in logistics network.

The PhD work will involve several steps:

- State of the art and the problematic position in relation to the existing literature,
- Selection of optimization problems to be solved and modelling,
- Definition of a generic resolution method (heuristic or metaheuristic based on an exact method)
- Implementation and evaluation.

The work should lead to a validated optimization method a set of datasets from the scientific literature and real cases. Research efforts will focus on finding a compromise between optimality, computation time and the applicability to a number of mathematical models.

## Practical information

- Location: Ecole des Mines de Nantes, Nantes, France.
- The Ph.D student will be registered at the ED STIM doctoral school.
- Duration: 3 years, starting from September/October 2011
- Salary: 1350 to 1600 euros per month (net salary), depending on the teaching activity

## Profile of candidates

- Master or equivalent degree with a strong background in Computer Science and Operations Research (combinatorial optimization).
- At least one significant work in Operations Research
- Good knowledge of Java or C++
- Language: English or French

## Contact

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To apply, send CV + cover letter + master's degree grades or evaluation (even partial) + letter(s) of recommendation.