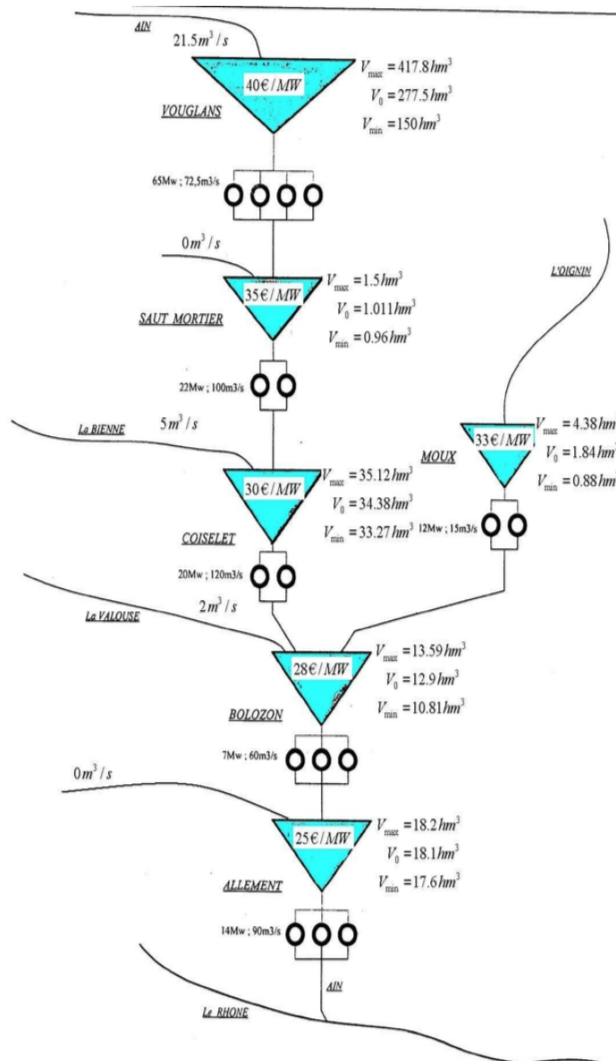


# 6-months internship for Master 2 students on Challenging mixed integer nonlinear programming problems for the maintenance planning for hydropower plants



## Project topic:

The aim of the project is to study a crucial problem in energy management: **the optimal maintenance planning for hydroelectric power generation plants.**

This is a challenging optimization problem and it is of great practice importance because the strategic decisions taken during maintenance planning directly impact the availability of hydropower stations. This availability is a key input for the unit commitment decisions taken daily by utility companies.

The objective of the project is to propose novel **mixed integer nonlinear optimization approaches** that take into account both the standard constraints in maintenance planning for hydropower plants and the nonlinear aspects of the power output function, often linearized in the literature but with loss of information.

The project involves several postgraduate students and researchers from CNRS & École Polytechnique (France), Polytechnique Montreal (Canada), University of Edinburgh (UK), EDF R&D (France).

Although not mandatory, the internship can be followed by a PhD.

**Required background:**  
mathematical programming, algorithms, coding

## Contacts:

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