Post Doctoral (OR Research Engineer) fellowship

**Distributed Control of a Tidal Farm**

**Context**

This proposition is a part of the large joint project PRISMER involving GIPSA-lab and G2Elab (public research labs on control systems and power systems) and ALSTOM-ocean (worldwide leader in turbines construction and operation, Nantes) together with six other partners including GDF-SUEZ. This project aims at building and operating a tidal farm of 30-200 MW. Successful applicants will work at GIPSA-lab (Grenoble) [http://www.gipsa-lab.fr](http://www.gipsa-lab.fr).

**Scope of This Job Offer**

This job offer concerns the design of a distributed control of the tidal farm that includes several dozens of individual turbines. More precisely, the distributed control aims at affecting set-points to existing individual controllers of each turbine so that the collected power quality is guaranteed as well as the grid code is respected. A possible workflow can be described by the following steps:

1. Design reduced models for the controlled turbines that are both faithful and scalable.
2. Define precisely the specification for the distributed control of the farm. This may include several operating modes.
3. Design an ideal (centralized) controller to use in the evaluation of the distributed control architecture sub-optimality.
4. Design a scalable distributed control architecture that involves the reduced models developed in item 1 and which fulfills the specification defined in item 2.
5. Evaluate the proposed distributed strategy on a battery of bench tests.

**Needed Skills**

Successful applicants should have the following indispensable skills:
✓ Solid background in optimization (linear programming, quadratic programming).
✓ Solid knowledge of Matlab/Simulink environment.
✓ Good knowledge in power systems related topics.

**Period & Contact Information**

The offer starts as soon as possible for a minimum duration of 9 months (by default period is of 12 months extendable to 24 months).

**To apply**

Click here to send Email containing your complete CV