

***Current and vibration analysis
for a preventive condition monitoring in offshore wind farms
An advanced signal processing approach***

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The production energy of wind farm is becoming more and more important in several countries. Its impact on the electrical grid grows every day, at the country and continental grid scale. The economic value of the wind farm does not only reside in the amount of energy produced but also in the capacity to forecast this energy. The forecast is built on production capacity available and wind prediction. The availability of the equipment and therefore the capacity to plan the maintenance based on a reliable condition monitoring of the equipment are crucial challenges that the project KAStrion will take up.

KAStrion is a European project which will run from 2012 to 2014 with 7 partners coming from France, Poland and Netherland. Based on academic research labs, technical centers, industrial companies and production plants, the originality of KAStrion project lies in the crossing of high competencies in the full value chain of the condition monitoring of a mechatronic system from the data captures to the final decision-making in order to improve the production goals.

KAStrion project will deliver a stand-alone analysis system which delivers an innovative on-site pre-diagnostic of the machine based on a multi-modal spectral monitoring technology, connected to a tailored diagnostic center which delivers a reliability prediction of the farm.

The internship subject will focus on the signal processing part of the system, mainly on the surveillance of the system along time. Based on the analysis part already developed, the objective is to propose a way of tracking relevant features in order to monitor the turbine components.

The student will be integrated in SAIGA team of GIPSA-lab, in Grenoble, in collaboration with the *Signal and Communication* team from IRIT lab of Toulouse.

Skill requirement: signal processing, time-frequency and spectral analysis, detection theory, classification

Financial support: KAStrion project

For further information: [AStrion](http://www.kastrion.fr)

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