

Online performance monitoring in marine composite propellers

Ecole Centrale de Nantes + Naval Group



NICOLAS BAUDIN
INTERNSHIPS IN FRANCE INITIATIVE

Name of the hosting institution in France	Ecole Centrale de Nantes
Name of the host laboratory / research team	Research Laboratory in Hydrodynamics, Energetics and Atmospheric Environment (LHEEA)
Address	1 rue de la Noë 44321 Nantes Cedex 3
Name of the supervisor	Ducoin Antoine
Function	Assistant Professor
Email	antoine.ducoin@ec-nantes.fr
Phone number	+33240371554

Internship offer

Topic of the internship (title) Online performance monitoring in marine composite propellers

Proposed dates of the internship **Start:** 2019-11-01 **End** 2020-04-30

Scientific and academic objectives of the internship (detailed description of the internship content, work expected from the intern and expected outcomes):

Abstract: This internship offer occurs in the context of an international collaborative research project between École Centrale de Nantes (French engineering school), Flinders University (Australian University) and Naval Group (French company). The whole project is about the on-line performance monitoring and the damage assessment in marine composite propellers. The purpose of the current internship, which is only a part of the whole project, is focused on the building of a metamodel (real-time surrogate model) of a flexible composite blade dynamic behaviour. This part is rather mathematically involved and will make use of machine learning techniques. The building of the metamodel will exploit data, previously generated in another part of the project, and which come from both fluid-structure numerical simulations and experimental tests. Duration and material conditions: the internship is scheduled for 6 months. A monthly allowance will be granted. A travel grant will be furnished through the Nicolas Baudin program. The workplaces will be in Nantes, both at Naval Group (Technocampus Océan) and at École Centrale de Nantes. Scientific supervision is provided by École Centrale de Nantes, Flinders University and Naval Group.

Name of industrial partner	Naval Group
Role of the industrial partner in the internship project	The student will work at Naval Group to work on the meta model , and Centrale Nantes to work on processing the numerical and experimental data. Supervision will be provided by Centrale Nantes and Naval Group.
Main contact at the French industrial partner	CEDRIC LEBLOND cedric.leblond@naval-group.com
Name of the Australian partner institution	Flinders University
Name of lab/department/team involved in the collaboration at the Australian partner institution	Centre for Maritime Engineering, Control and Imaging / College of Science and Engineering
Main contact in the Australian partner institution	Karl Sammut
Function of the main contact in the Australian partner institution	Associate Professor , the Director of the Centre for Maritime Engineering, Control and Imaging at Flinders
Email address of the main contact in the Australian partner institution	karl.sammut@flinders.edu.au
Outside of this ongoing collaboration, will applications coming from students of other eligible Australian universities be considered by the hosting institution in France?	No

Expected profile of applicant

Level of study	Final year/Masters/Phd engineering student, with interest in Research & Development activities
Discipline	Generalist or specialised training in the following fields: mechanics, mathematical modeling and numerical resolution.
Required qualities, knowledge and skills	Desired knowledge: fluid and structure mechanics, numerical and algorithmic implementation, signal processing and machine learning techniques.
Other specific eligibility criteria	The candidate must be from Flinders University

