

Doctoral position in Offshore Wind Structures at the University of Liege, Belgium

Research topic:

Model Uncertainty Quantification and Updating

The research group **ANAST** (Naval Architecture and Offshore Wind Structures) of the University of Liege (Belgium) is seeking doctoral candidates for conducting scientific research on optimal inspection and maintenance planning for offshore wind structures.

Follow this link to discover the group ANAST: <http://www.anast.ulg.ac.be/>

In ANAST, we contribute to the **development of decision support models** for offshore wind structures inspection and maintenance planning. We prescribe informed decisions to optimally inspect, monitor and maintain deteriorating structures. We are in the mission of **optimizing life-cycle costs of offshore wind structures** from a risk perspective.

All our activities are best presented through our core competences:

- Structural reliability / Optimal decision making under uncertainty
- Optimization and crashworthiness of marine structures
- Artificial intelligence / Deep reinforcement learning
- Experimental and numerical ship hydrodynamics

The group ANAST is part of the *Structural Engineering* Research unit (ArGEnCo [link](#)), with 25 faculty staff and 200+ researchers.

Profile

Applicants for this doctoral position must have completed a master's degree in a field closely related to civil engineering, naval architecture, mechanical engineering or physics.

Excellent written and verbal English communication skills are required. Preference will be given to candidates with a strong interest and some level of proficiency in computer programming (Matlab, Python).



Research group ANAST
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Function

We are looking for highly motivated doctoral candidates to join our group and contribute to several on-going scientific research projects dealing with optimal inspection and maintenance planning in the context of offshore wind structures. Although the specific topic of each position will be defined based on detailed discussions with the candidates (background, interest ...), the topics will relate to one of the following subjects:

- **Model uncertainty quantification** and **updating** based on monitoring information (structural response, environmental data);
- Numerical **assessment** of **offshore wind substructures** by means of coupled dynamic response simulations (FAST, Sesam-Bladed);
- Development of methodologies for **optimal decision making under uncertainty**, including deep reinforcement learning simulators;
- Probabilistic computational modelling of **deteriorating structures** (fatigue and corrosion), simulating crack propagation and/or corrosion stochastic processes.

* Check our latest publications for more information ([link](#)).

The candidates will also contribute to teaching and project activities, which is an asset for their professional development.

We offer

Candidates will be fully funded (monthly salary -after tax- of approx. 2,100 € for up to 4 years, including health insurance). They will benefit from a dynamic working environment, with stimulating scientific support, advanced computational modelling tools and state-of-the-art laboratory facilities. They may be requested to apply for extra funding.

The University of Liège offers a comprehensive and innovative training program ([link](#)), which enables early-career scientists to carry out their research in the best possible conditions, in compliance with the European Charter for Researchers ([link](#)).

How to apply?

Outstanding candidates should apply by email to pgmorato@uliege.be (at the attention of Prof. Philippe RIGO) with a curriculum vitae, full transcripts of Bachelor and Master studies, a motivation letter and the contact details of two academic or industrial referees who might be contacted by us.

Short-listed candidates will be invited at an oral interview at the University of Liege. The positions will remain open until filled. The selection will start from February 1st, 2020. Starting date is expected in the period from July to September 2020, or earlier.



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