



Industrial PhD position in numerical weather prediction for renewable energy - part of AptWind Marie-Curie doctoral network

Do you want to do an industrial PhD with the world's leading software provider for planning renewable energy projects and world leading research institutions in renewable energy?

And be a part of something bigger by doing it as part of the EU-wide AptWind Marie-Curie doctoral network?

If so, you should apply for this PhD position focused on improving the predictions of numerical weather modelling for wind energy applications, and you will be having a great time while contributing to the world's transition to a renewable future.

PhD project and AptWind Marie Curie network

During this PhD you will work with numerical weather prediction models (NWP) and seek to improve their performance for wind energy applications. NWP models have become increasingly important during the past two decades, as tools for modelling of wind resources. The NWP models relevant to this PhD project are local area meteorological models, also called mesoscale models.

This PhD project will focus on reducing the systematic biases in wind speed predictions performed by the open-source mesoscale model WRF (Weather Research and Forecasting). These biases vary in space and time and correlate with geographical location (e.g., far in-land), time of year, and time of day. Reducing some biases may require including finer spatial scales in the mesoscale model or assimilating other data sources, while other biases are better addressed by improving WRF's input data, e.g. through more accurate land use or satellite data. Reducing biases is important for improving the accuracy and taking the next steps towards new and improved ways of predicting wind resources combining NWP and remote sensing.

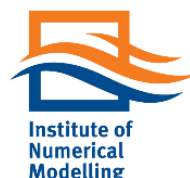
The PhD project is a part of the broader AptWind Marie Skłodowska-Curie doctoral network consisting of 15 industrial PhD projects with partner companies and universities across the EU, including the biggest players of the European wind energy sector both on the manufacturing and on the operating side. This means that you will not be doing your PhD alone – in addition to the supervising team you will be partnering-up with 14 sibling projects and PhD students within the AptWind doctoral network. Together you will do dedicated courses and visit partner research facilities and companies in Europe and form a solid network of doctoral students. More about AptWind: <http://www.aptwind.eu>

Company, University and Timeline

During the 36 months PhD-project the PhD candidate will spend at least 50% of the time based at the Danish company EMD and up to 50% at Latvia University (LU) where the student will be part of the PhD program. It will be possible to organize short work or course visits to other AptWind partners, in particular, DTU Wind (Technical University of Denmark) where the student will have an assisting supervisor (Andrea Hahmann). The main university supervisor will be Tija Sīle from Latvia University and the main company supervisor will be Lasse Svenningsen from EMD.

EMD International A/S

EMD is a world-leading provider of software planning tools for renewable energy plants, with the main products: windPRO and energyPRO. EMD was founded in the late 80'ies and is fully owned by its own foundation Energi & Miljø data - this foundation has the main purpose to contribute to society's transition to a 100% renewable future. EMD is based in Aalborg, Denmark in the NOVI science park next to Aalborg university, not far from the beautiful Danish west coast and Northern Europe's best surf spots. EMD has an in-house HPC computer cluster and 10+ years' experience within NWP simulation and related data products. As industrial PhD student you will join EMD's R&D team, currently with 11 employees, a team with diverse backgrounds and a positive collaborative spirit - we are all enthusiastic about science, engineering and renewable energy. More about EMD: <https://www.emd-international.com/>





University of Latvia (Latvijas Universitāte, LU)

University of Latvia is one of the largest research universities in Latvia with 20,000 students. It has significant experience in hosting PhD students from other countries. This PhD position is associated with Department of Physics for the PhD program and Institute of Numerical Modelling (INM) for the research part. Department of Physics has a long tradition of research in Fluid Dynamics and Computational Fluid Dynamics and takes pride in mathematical competence. INM is the leading Environmental Modelling institution in Latvia with wide experience on topics such as meteorological data analysis and climate change, atmosphere and oceanography, and has contributed to the creation of the New European Wind Atlas.

The University of Latvia is located in the capital city Rīga, a vibrant city with a population of 1 million which provides a lot of opportunities for socializing and having fun. Despite the soviet past, Latvia is a modern and rapidly developing nation with many opportunities for growth and a flat hierarchy.

More about LU: <https://www.lu.lv/en/>

Admission & competence requirements

Applicants must hold a Master of: Meteorology, Oceanography, Physics, Chemistry, Engineering Sciences or similar and meet the EU eligibility and mobility criteria and, hence, may not have resided in Latvia for more than 12 months out of the past 36 months. Further details at: <https://www.aptwind.eu/eligibility>.

You must have previous experience with coding (preferably Python) and you should have experience working with modelling and/or data analysis. It is not a requirement to have previous experience with WRF or other NWP models, but it will be beneficial. In general, we are looking for an applicant with strong analytic skills, a persistent and goal-oriented work attitude and with a positive and collaborative mindset.

Salary

Salary is according to current EU regulations with cost-of-living corrections between Latvia and Denmark and eligible supplement in the case of family obligations. During the first part of the PhD in Latvia, the base salary (gross, before any taxes) is 2584 €/month. In the subsequent remaining part in Denmark, the salary is adjusted to Danish cost-of-living standards.

Deadline

Applications must be received at latest on November 26th, 2023.

How to apply

To apply for this position, please send the following to tija.sile@lu.lv and CC to job@emd.dk:

- CV
- Academic transcript
- Letter of motivation



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UNIVERSITĀTE

