



Assistant Researcher (PhD Grant) in Atmospheric Physics in the Vicinity of Offshore Wind Farms in EU Industrial Network

About AptWind:

Atmospheric Physics and Turbulence for Wind Energy (AptWind) is an innovative European Industrial Doctoral Network. AptWind aims to train a new generation of researchers to tackle the current and future challenges in atmospheric flow physics and turbulence for wind energy applications.

The AptWind program includes specialized seminars, such as:

- Trustworthy Artificial Intelligence for Environmental Systems Science at NCAR in Boulder, Colorado, in 2024.
- Remote Sensing for Wind Energy PhD Summer School at the Danish Technical University in Denmark in 2025.

Participants in the AptWind program will:

- Acquire a portfolio of transferable skills.
- Contribute to significant advancements in the transition to green energy through their research.
- Develop a broad professional network within the wind energy industry.
- Engage with the entire student and supervisory network across Europe to present progress, discuss challenges, and learn from the AptWind community.

PhD topics cover essential engineering domains for wind energy, such as computational fluid dynamics, lidar measurements and machine learning. Candidates will split their time between a university in one country and a private-sector company in another.

More information: AptWind <http://www.aptwind.eu>

Offer Description:

The PhD research focuses on enhancing an existing meso-microscale coupled model. The Weather Research and Forecasting (WRF) model will provide boundary conditions to drive a time-dependent Reynolds Averaged Navier Stokes (RANS) computational fluid dynamics model. The research aims to include the wake effect of future wind turbines with tip heights up to 300 m, focusing on offshore marine environments. Key areas of investigation include boundary layer height, low-level jets, atmospheric stability, gravity waves, complex land-sea interactions, and their impacts on high-fidelity wake models.

Work Locations:

- First 18 months: Natural Power, France. You will work with the Analytics Team, focusing on evaluating current wake models and their responses to the advanced topics discussed previously. Development of the current Ventos wake implementation and validation against a range of operational sites. This will also include the integration of new methods into the commercial modelling chain.
- Second 18 months: University of Porto (FEUP), Portugal. You will collaborate with the VENTOS® CFD research team, continuing the work from Natural Power. This phase will focus on developments of the meso-scale coupled model with specific reference to integrating wake modelling into a coupled model that is commercially deployable in the current modelling chain.

Benefits:

You will be compensated according to local rules for Doctoral Researchers and the regulations of Marie Skłodowska-Curie Actions Doctoral Networks - Industrial Doctorates. The employment period is three years, with the first 18 months in France and the following 18 months in Portugal.

About Natural Power:

Natural Power is the world's leading independent consultancy and services company in the renewable energy sector. With over 25 years of multidisciplinary expertise, Natural Power supports solar and wind power projects worldwide, thanks to a team of over 400 experts in 12 countries.

More information: Natural Power <https://www.naturalpower.com/uk/about>

About the University of Porto / Faculty of Engineering (FEUP):

FEUP is a premier engineering institution dedicated to the creation, transmission, and dissemination of knowledge, technology, and culture in engineering. FEUP has extensive experience with atmospheric flows for wind energy, dating back to the early 1990s. The team has pioneered the use of CFD in wind energy resource characterization and site evaluation with the VENTOS® software suite.

More information: FEUP <https://www.up.pt/portal/en/>

Selection Methodology:

1. Curriculum Evaluation: Initial assessment of candidates based on their academic and professional background.
2. Remote Interview: Selected candidates will undergo a remote interview to assess their English language proficiency and technical knowledge.
3. Final Selection: The top three candidates will be invited to visit the worksite in France. During this visit, candidates will meet with supervisors, present their solutions to assigned problems, and demonstrate their capabilities.

Requirements for this PhD Position:

1. Master's degree in mechanical engineering, Physics (Atmospheric Sciences), Applied Mathematics, or Computer Sciences with a strong scientific and professional background.
2. Required skills:
 - Proficiency in Fortran77 and Python programming languages, and familiarity with Linux and Windows operating systems.
 - Experience in computational fluid dynamics.
 - Must be a doctoral candidate, i.e., not have obtained a doctoral degree at the time of recruitment.
3. English language proficiency at level B2 or above.
4. Researchers must not have resided or carried out their main activity (work, studies, etc.) in France for more than 12 months in the 36 months before the contract's commencement date. Please read the eligibility criteria at AptWind Eligibility <http://www.aptwind.eu/eligibility>

Where and When to Apply:

Apply online ([Assistant Researcher \(PhD Grant\) in Atmospheric Physics in the Vicinity of Offshore Wind Farms in EU | Natural Power](#)) or directly to Careers@naturalpower.com referencing Natural Power/AptWind, before 23:59 (local time) on July 14th, 2024.

Start Date: September 2024

How to Apply:**Submit a CV with the following information**

1. Full name.
2. Identity or citizen card number or civil identification number.
3. Tax identification number.
4. Date of birth.
5. Residential address.
6. Contact details, including email and phone number.

Submit the following documents:

1. Copy of certificate or diploma degree.
2. Curriculum Vitae with all relevant information.
3. Letter of motivation.
4. Copies of up to 5 most relevant publications.
5. Any supporting documents relevant to determining your application eligibility or assessing your qualifications.