INTERNSHIP: Study of wind turbine noise propagation for an operational wind farm M/F

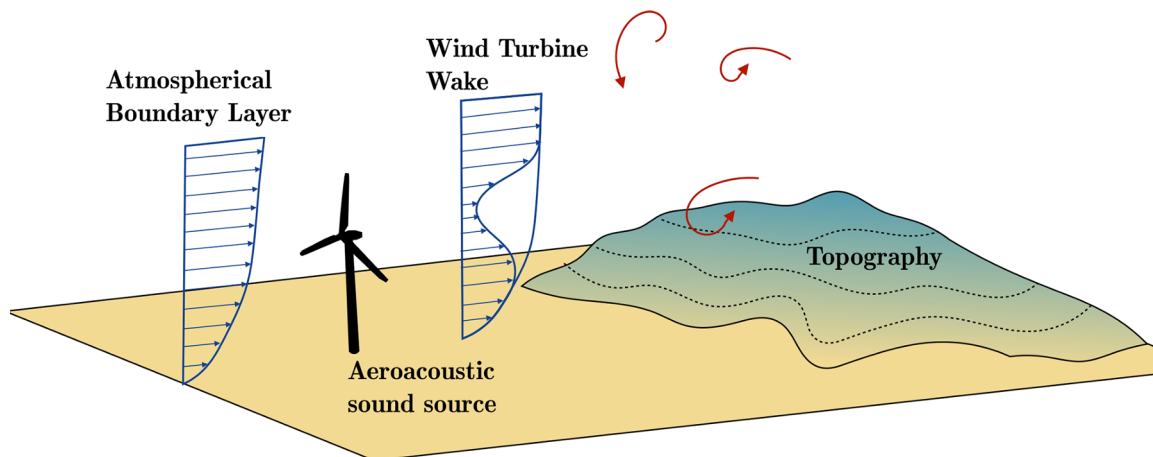**Internship available:** March-April to September 2026
Internship duration: 6 months
Location: École Centrale Lyon - Laboratoire de Mécanique des Fluides et d'Acoustique (LMFA)
    36 avenue Guy de Collongue
    69134 Ecully cedex, France
Sector: Acoustics - Renewable Energy

Company description:

The internship relies on a collaboration between the research lab LMFA in Ecole Centrale de Lyon and the wind turbine operator VALECO.

LMFA in Ecole Centrale Lyon is a research lab focusing on fluid mechanics and acoustics. Since 2020, a research team at the lab investigates noise propagation from wind turbines.

VALECO is a company specializing in the development, financing, operation, and maintenance of renewable energy power plants in France. With a presence across the entire project value chain, from identifying suitable sites to selling renewable electricity, VALECO has joined the German group **EnBW**, one of Europe's leading energy companies. EnBW is a leader in energy production, distribution, and supply, with more than 5.5 million customers.

Job description:

General context:

When developing a wind farm project, the noise emitted by wind turbines can be a source of concern for local residents and cause noise pollution. This issue must therefore be considered throughout the life of the project, both during the development phase (in particular through the impact study) and during the operational phase. VALECO's acoustic engineers, who support project managers during the design phase, are in direct contact with acoustic design offices, the administration, and local residents. Their role is to consider feedback from these various stakeholders in order to minimize the risk of disturbance. Following feedback from local residents disturbed by noise from a wind farm, you will intervene at this wind farm during the operational phase to understand the perceived disturbance. The specific feature of this wind farm lies in its topographical conditions, which can alter the noise perceived by local residents.

Scientific context:

Predicting wind turbine noise is a complex subject of study, pursued by academics, wind farm operators, and wind turbine manufacturers alike. Several noise mechanisms, linked to atmospheric conditions, influence the levels of noise emitted. The size of the source and the high low-frequency content imply long propagation distances, which leads to propagation effects linked to topography and wind gradient that can significantly alter the levels perceived

by local residents. In this context, recent work carried out at LMFA has developed prediction methods for wind noise propagation in different atmospheric and topographical conditions.

In the framework of a collaboration between LMFA and VALECO, the internship will take place at its premises on the campus of the Ecole Centrale de Lyon. The aim of the internship is to apply and continue the work carried out as part of Jules Colas' thesis [1] on an existing wind farm and future projects.

This mission has several objectives:

- Calculate (using models developed at the LMFA) the propagation of noise around the wind farm to the nearest houses;
- Analyze the results of an acoustic measurement campaign;
- Compare and interpret the calculated and measured results (relevance of the models used, significant parameters on noise levels, etc.);
- Apply the models to future projects;
- Assess the impact of terrain on amplitude modulations;

Required profile:

- Final-year engineering student or Master's student, preferably with technical training in acoustics (sources, propagation, etc.);
- You have an interest in renewable energies and numerical simulation;
- Motivated, curious, and excellent analytical and interpretive skills.

Remuneration: around €600 per month

Contact: Send your CV and cover letter by email to:

- Didier Dragna, Assistant Professor, LMFA, Centrale Lyon, didier.dragna@ec-lyon.fr
- Brice Geoffroy, Engineer, VALECO, bricegeoffroy@groupevaleco.com

References:

[1]   Colas, J., 2024, Numerical investigation of wind turbine and wind farm noise propagation in different atmospheric and topographic conditions, doctoral thesis, 2024ECDL0040. https://theses.hal.science/tel-04920940v1