Blade midspan vortex induced noise emission

Student Project Proposal

APPLY

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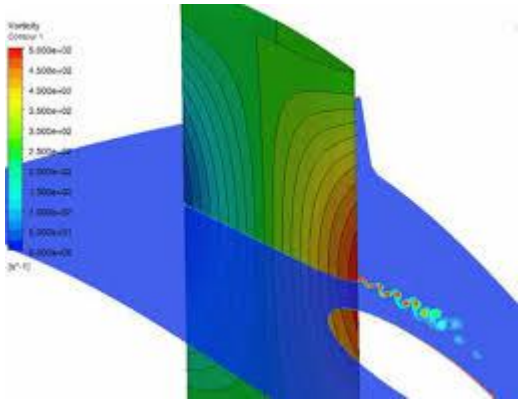
Short description of the project:

- Project will focus on noise emission from interaction between trailing edge of wind turbine blades and large-scale vortexes as generated from the aerofoil itself.
- Full scope of the project is to investigate noise emission by mid span vortex shedding from surface obstacles interacting with the blade trailing edge.
- Tip noise emissions is seen as a special case where the vortex is generated from the blade tip, and half space interacts with a trailing edge.

Scope:

The project aim at investigation of noise emission effects of vortex interaction with blade TE.
The topic is seen as driving the tip noise emission mechanism and may in addition be relevant for situations where the blade include out of plan obstacles of differing shapes.

The project will include planning and performance of acoustic wind tunnel test campaigns, and analysis of collected data. Findings may be confirmed by CFD studies and/or analytical methods like e.g. Ffowcs , Williams & Hawkings modeling of the interaction.



Other information (not mandatory):

- Master or Phd thesis work depending on analytical level in project
- Application deadline
- Link to articles

Keywords

Wind turbine noise, Acoustic wind tunnel testing, Simulation, Vortex / trailing edge interaction, CFD