PhD project:

Design of Large Wind Turbines using Fluid-Structure Coupling Techniques

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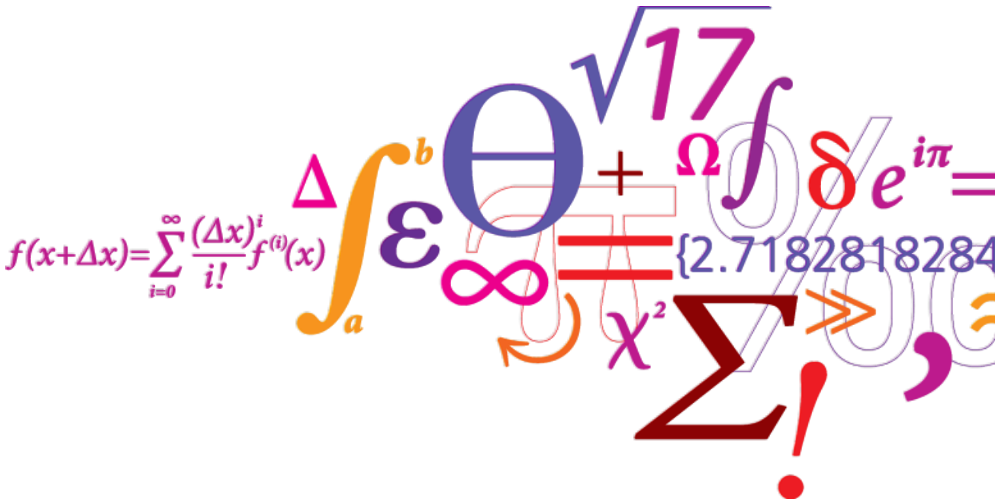

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My Tasks for WP2

- Develop a numerical tool suitable for designing rotors to run optimally at high tip speed;
- Design an experimental rotor model for WP5;
- Design an optimal rotor under offshore wind conditions in China, and
- Comparison with experimental data obtained in WP5.

Approach and Methodology

- **Model**
  - Free-wake viscous-inviscid aerodynamic rotor prediction code, *MIRAS*;
  - Coupled with dynamic structural model (min. 11 DOFs).

- **Objective Function**
  - COE.

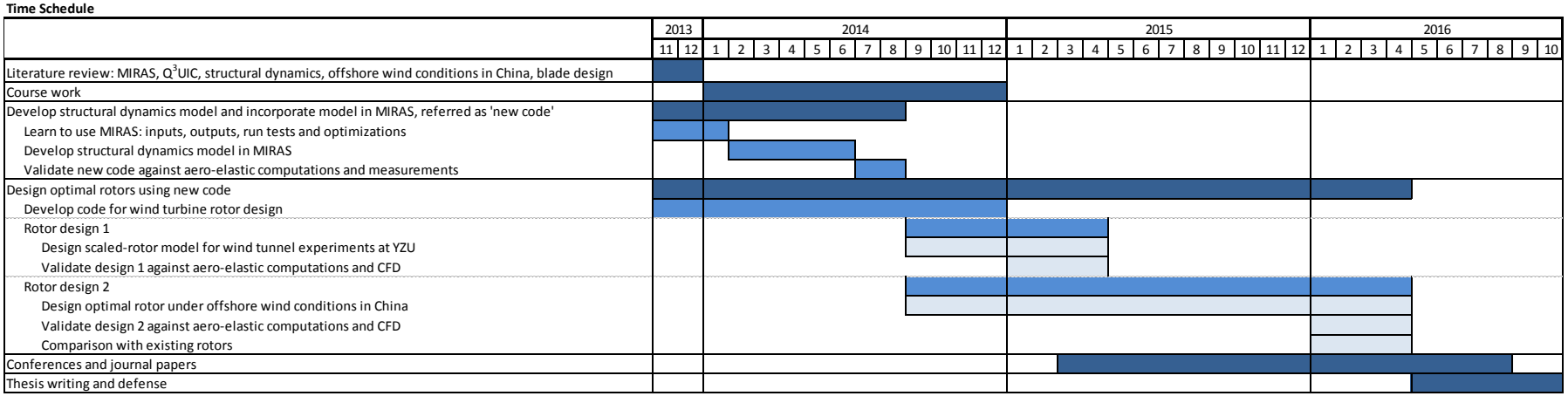
- **Blade Parameterization**
  - B-Splines, NURBS.

- **Optimizers**
  - *fmincon*, KNITRO (gradient-based);
  - Particle Swarm Optimization, Genetic Algorithm (gradient-free).

PhD project time schedule

- Start Date: November 1st, 2013
- End Date: October 31st, 2016

Time Schedule



Thank you for your attention

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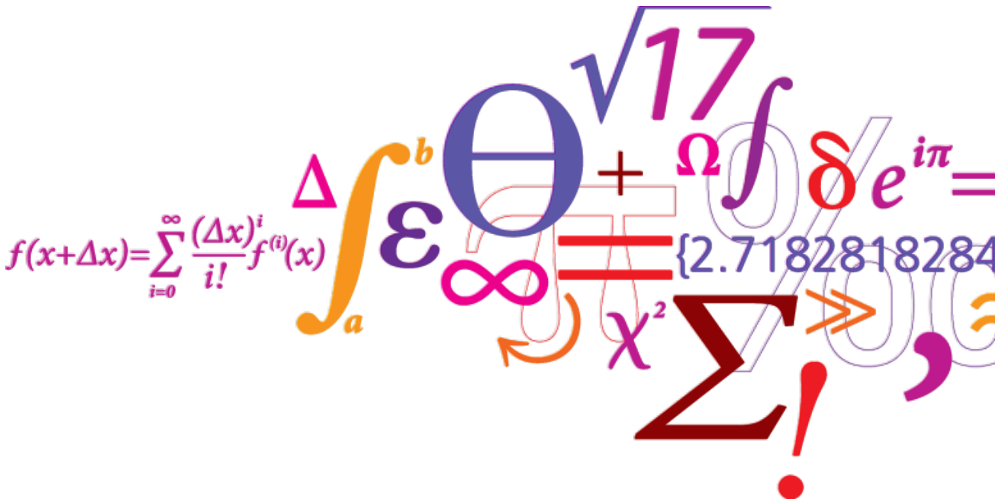

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