

Reference turbine §2.1

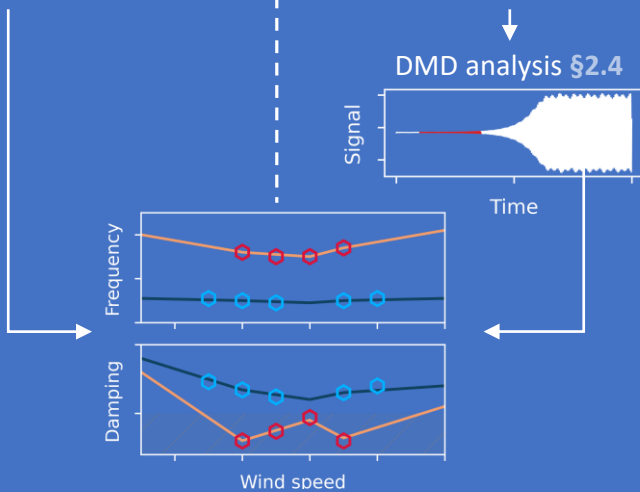
Critical layout modifications §2.1

Tool verifications §2.3

Stability analysis critical reference condition §2.5

Linear models

Non-linear time domain



Define Quantity of Interest (QoI)

=> damping most critical mode at 12 m/s wind speed

Uncertainty quantification §3.1

Case study 1:

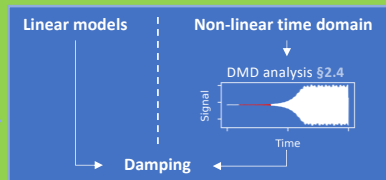
- Flapwise stiffness
- Edgewise stiffness
- Torsional stiffness

Case study 2:

- Edgewise stiffness
- Chordwise c.o.g. position
- Chordwise shear center position
- Principal axis orientation

Procedure:

1. Sample QoI
 - Sample uncertain parameters
 - Update models
 - Run simulations
2. Fit polynomial (PCE)
3. Verify PCE
4. Analyse sensitivity



§3.2.1

§3.2.2

§3.3.1

§3.3.2