

*Safe and cost effective
Independent Applied R&D
Modelling, testing & validation*

Predictable structural integrity

- Failure models for steel, composites and concrete
- Smart maintenance, Monitoring & Inspection strategy
- New structural concepts (Floating / Gravity based / Tidal)
- Regulations & Standards (expert opinion & validation)

Design, Transport, Installation and Logistics

- Noise initiation and propagation & mitigation
- Acoustic object (UXO) detection
- Autonomous underwater operations
- System integration

Wind turbine blade integrity

- LE erosion modelling and testing
- Self healing and responsive materials
- Composite joints
- Integrated Sensors

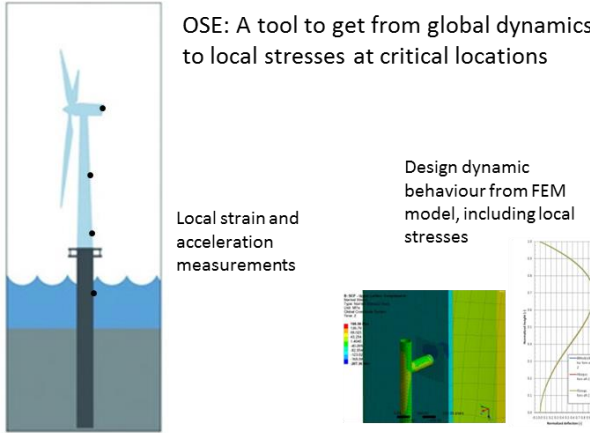
Operation & maintenance optimisation

- Human factors in offshore operations
- Safety management, operational resilience
- Adaptive automation / Robotics

Sjoerd van der Putten



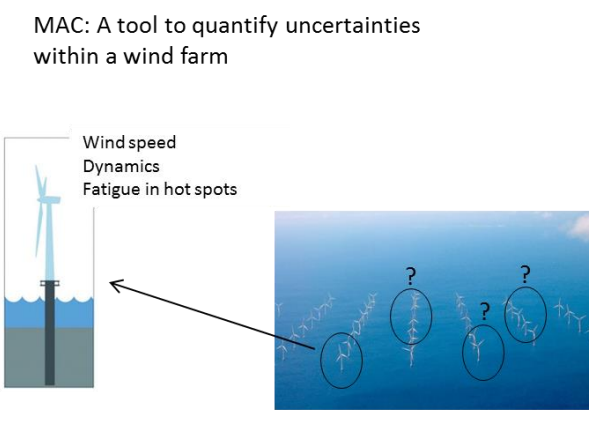
OSE: A tool to get from global dynamics to local stresses at critical locations



Local strain and acceleration measurements

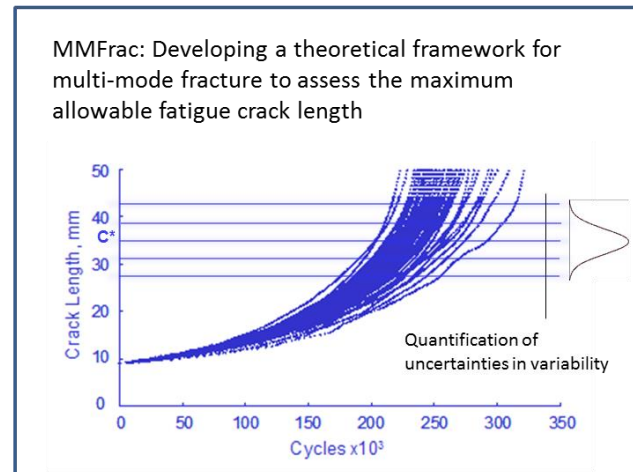
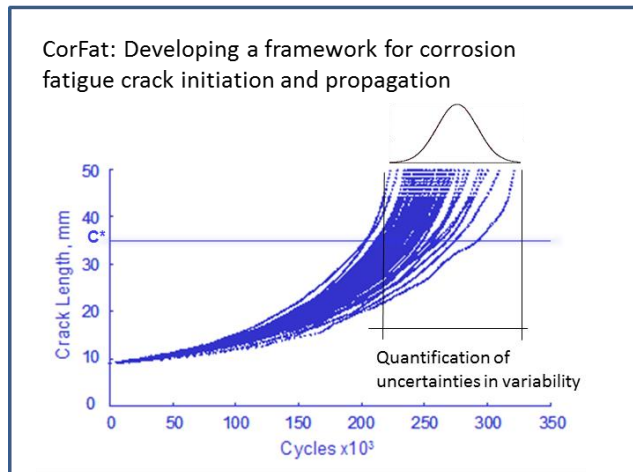
Design dynamic behaviour from FEM model, including local stresses

MAC: A tool to quantify uncertainties within a wind farm



Wind speed
Dynamics
Fatigue in hot spots

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TNO