

# Wind farm Maintenance & Operation decision Support WiMOS

## Objective

Reduce O&M costs of off-shore wind farms, by developing decision support tools enabling an optimized maintenance approach and improved planning of service and maintenance logistics

## Approach

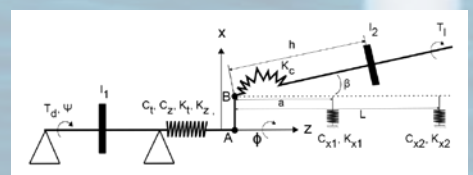
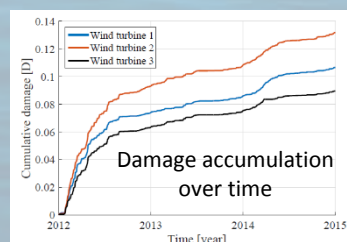
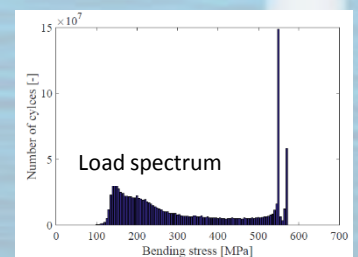
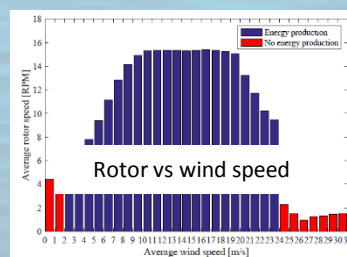
Apply **physics of failure modelling** to accurately predict failures and downtime and integrate that in a **stochastic framework** to simulate the logistic process, taking into account variations in cost factors like vessel rate, personnel, replacement costs and power losses

## Duration

Research project for 3 years: 2016 – 2018

## Contents

- WP1 – Development of physical models for gearbox, bearings, generator, transformer, cables, etc. and link these to measured variations in loads, usage and environment (e.g. SCADA)
- WP2 – Improve stochastic framework with focus on integration of WP1 models
- WP3 – Development of tactical level O&M decision support tool, including cost and availability factors for vessels, personnel, spare parts and production loss
- WP4 – Demonstration and validation of developed tools on a real off-shore wind farm



- Physical models
- Misalignment
  - Contact pressures
  - Fatigue damage accumulation