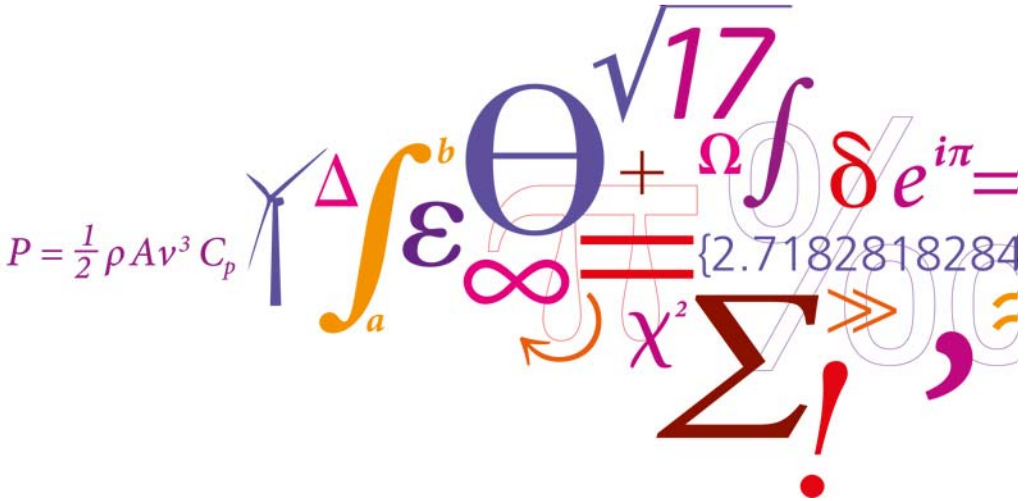
UniTTe Workshop
Introduction

Rozenn Wagner

UniTTe Workshop
15th November 2016
DTU Risø Campus



DTU Wind Energy
Department of Wind Energy

Agenda (morning)

9:00	*Presentation of the UniTTe project and team*	*R. Wagner, DTU*
9:10	*Calibration of nacelle lidars* *- Calibration method applied to ZephIR DM and Avent 5 beam Demonstrator* *- Wind speed measurement uncertainties*	 *A. Borraccino, DTU* *M. Courtney, DTU*
09:50	*Inflow to Nordtank wind turbine: comparison of CFD simulations and WindScanner data*	*N. Troldborg, DTU*
10:15	*Measurement campaign in flat terrain, Nørrekær Enge, June-December 2015*	*A. Vignaroli, DTU*
10:30	*Coffee Break*	
10:45	*Power curve measurement:* *- Wind field reconstruction algorithm & application to power curve measurements* *- Proposal for a new IEC standard*	 *A. Borraccino, DTU* *R.Wagner, DTU*
11:25	*Turbulence measurement and loads assessment:* *- Turbulence measurements with 5 point/circular LIDAR scans* *- Constrained Simulation of normal turbulence operation with embedded profiles from Lidar measurement* *- Validation of Simulated loads on the Siemens 2.3 MW with Met Mast data*	 *A. Peña, DTU* *N. Dimitrov, DTU* *A. Natarajan, DTU*
12:05	*Next setps: Moving to complex terrain* *- Numerical study of flow in complex terrain* *- Complex terrain case, Hill of Towie, October 2016- January 2017*	*N. Troldborg, DTU* *A. Vignaroli, DTU*
12:30	*Lunch Break*	

Agenda (afternoon)

13:30	*Presentations by project partners:* - *Nørrekær Enge UniTTe campaign – a ZephIR Lidar perspective* - *Nacelle LiDAR activities in RES*	 *C. Slinger, ZephIRLidar* *S. Feeney, RES*
14:15	*Coffee Break*	
14:30	*Experience with nacelle mounted lidars for wind turbine performance assessment and expectations from UniTTe advisory board:* - *Measurements with Nacelle LIDAR at large distance* - *Complications with implementing Nacelle LIDAR PCV on V164* - *Presentation from EDF EN*	 *B. Christensen, Vestas* *T. Hald, MHI Vestas* *H. Hermann, EDF EN*
15:30	*Workshop conclusions*	
15:45	*Workshop Adjourned*	
16:00	Project meeting with Advisory Board	Only UniTTe project partners and AB members
17:00	*AB meeting adjourned*	

All presentations will be accessible on the website: www.UniTTe.dk

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UniTTe Project and Team

Rozenn Wagner

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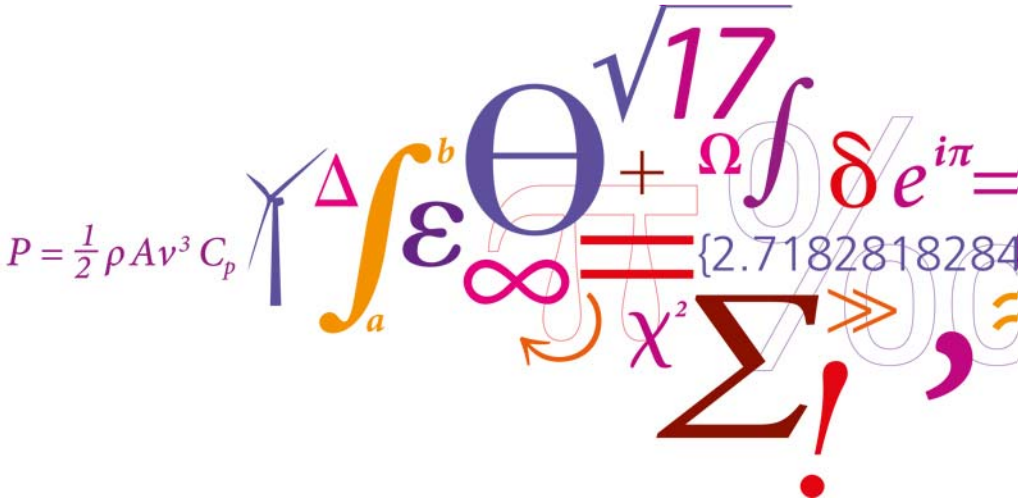

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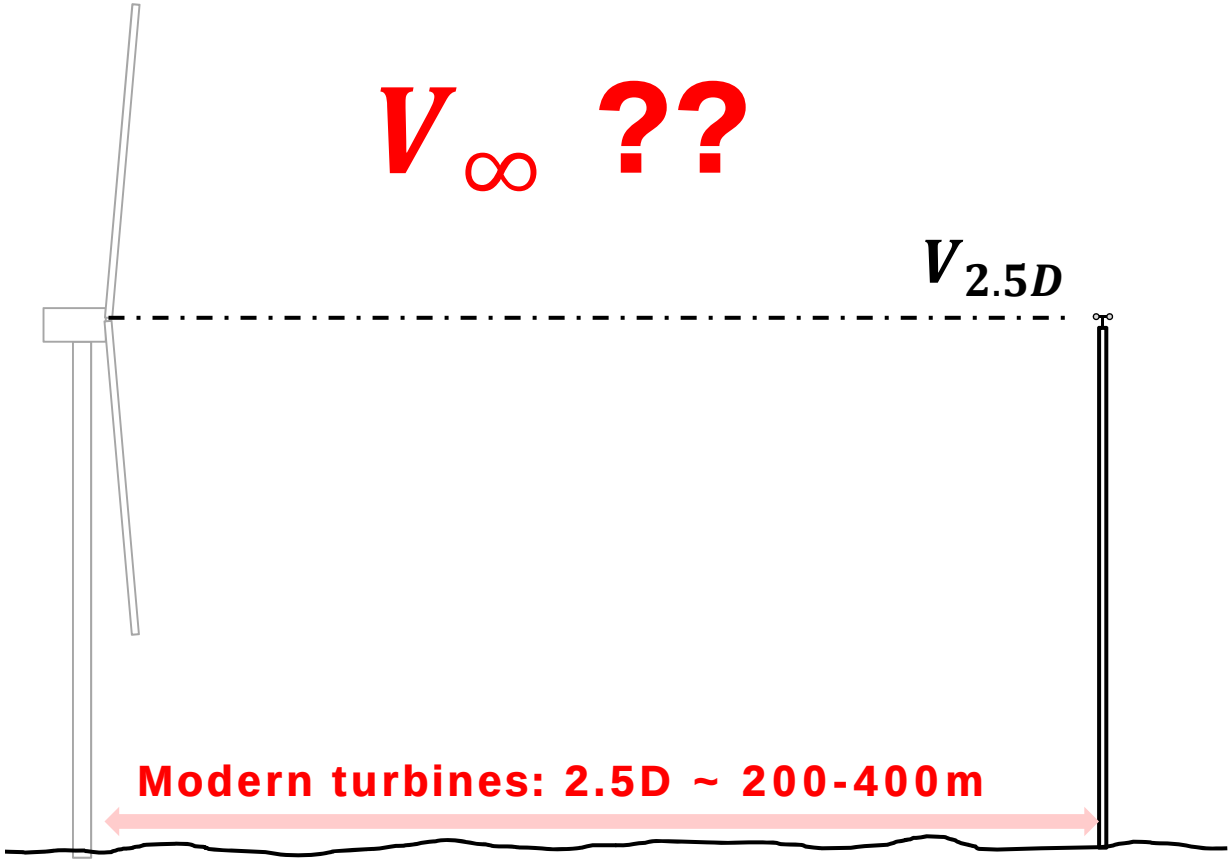
Turbine Testing

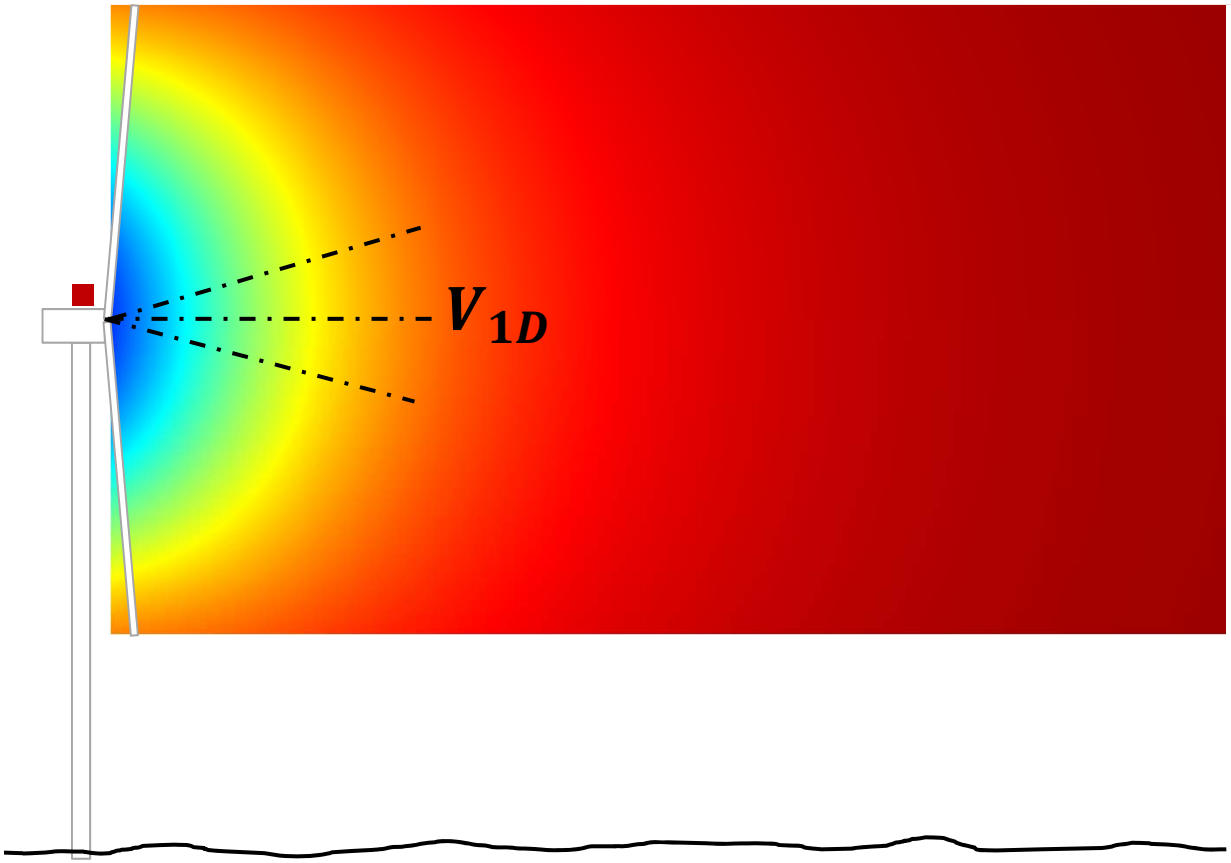
Are we doing it right?



Turbine testing requires to relate power and loads to "free wind speed".

- How do we get the free wind speed?
- For very large turbines, is the wind speed at 2.5D still representative of the wind speed at the turbine location?
  - For very large turbine offshore?
  - In complex terrain?
- Nacelle lidars are interesting alternative to masts, but are they able to provide reliable measurements at those range?

UniTTe: Unified Turbine Testing

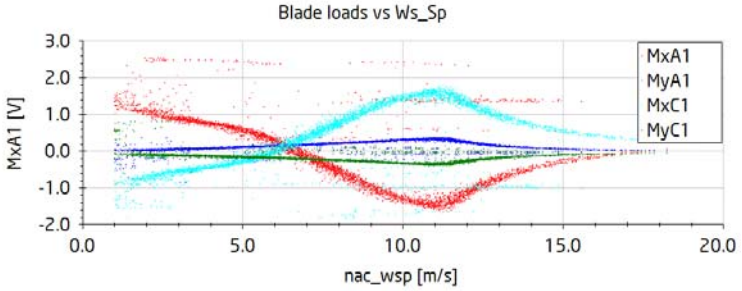


New methodology for power curve and loads assessment

- using profiling nacelle lidars
- based on near-flow measurement,
- applicable in any type of terrain
- basis for the future standards

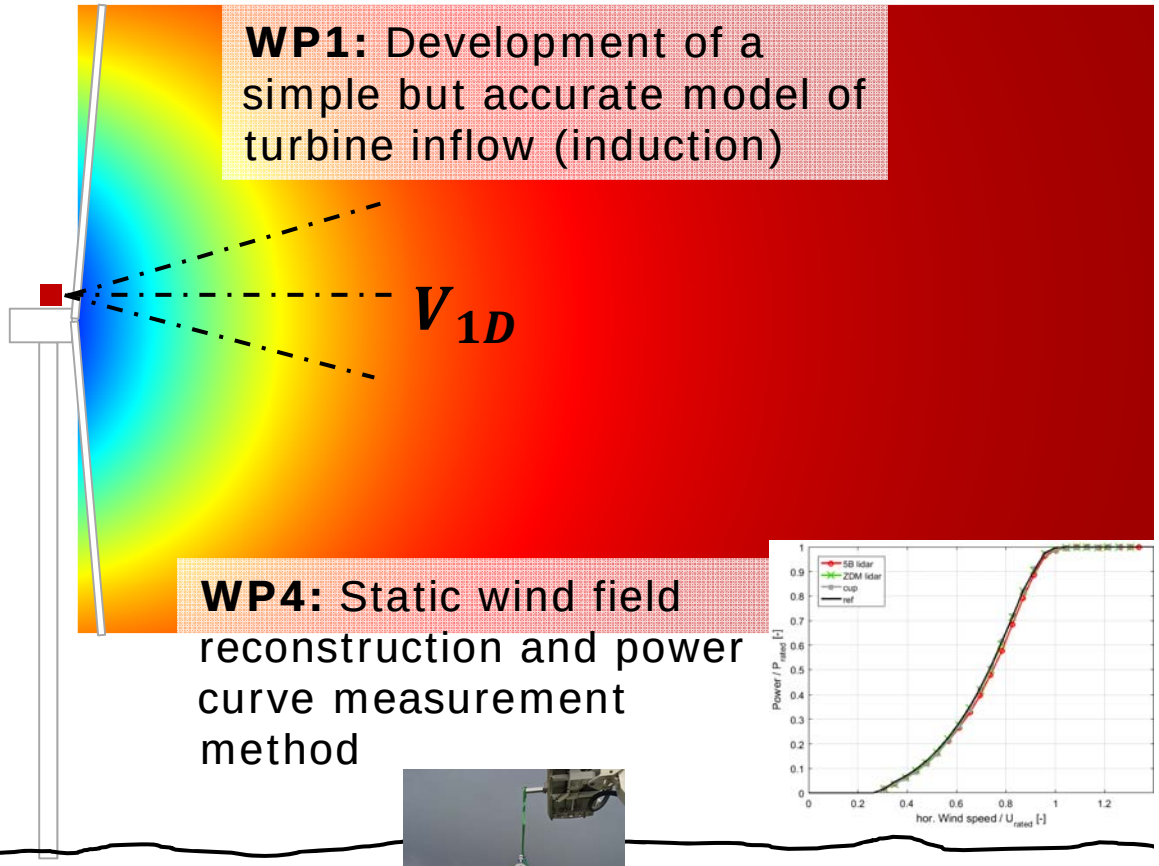
UniTTe: 5 work packages

WP5: Turbulence parameter reconstruction and loads assessment method



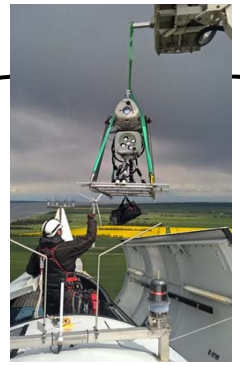
WP2: Calibration of nacelle lidars and measurement uncertainty estimation

WP1: Development of a simple but accurate model of turbine inflow (induction)



WP4: Static wind field reconstruction and power curve measurement method

WP3: Full scale field measurement campaigns with nacelle lidars



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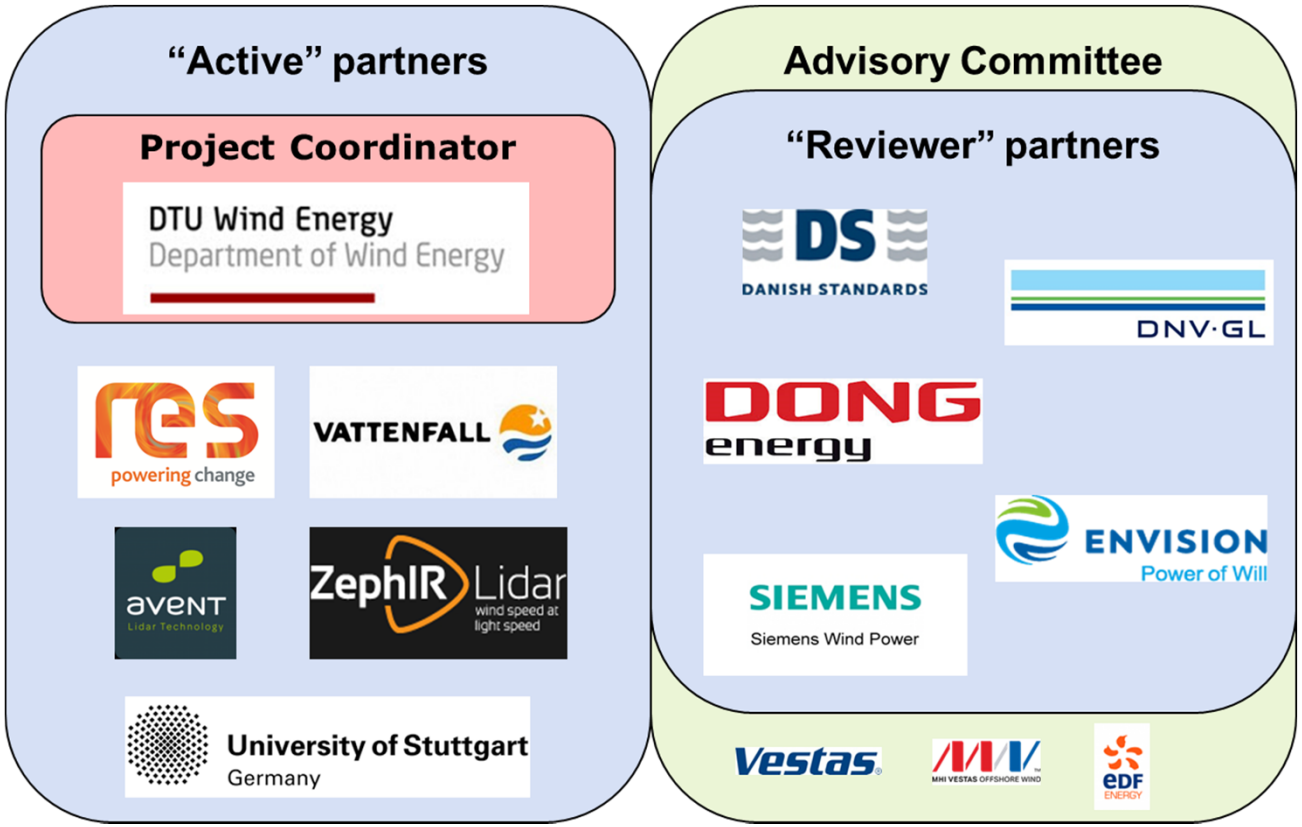
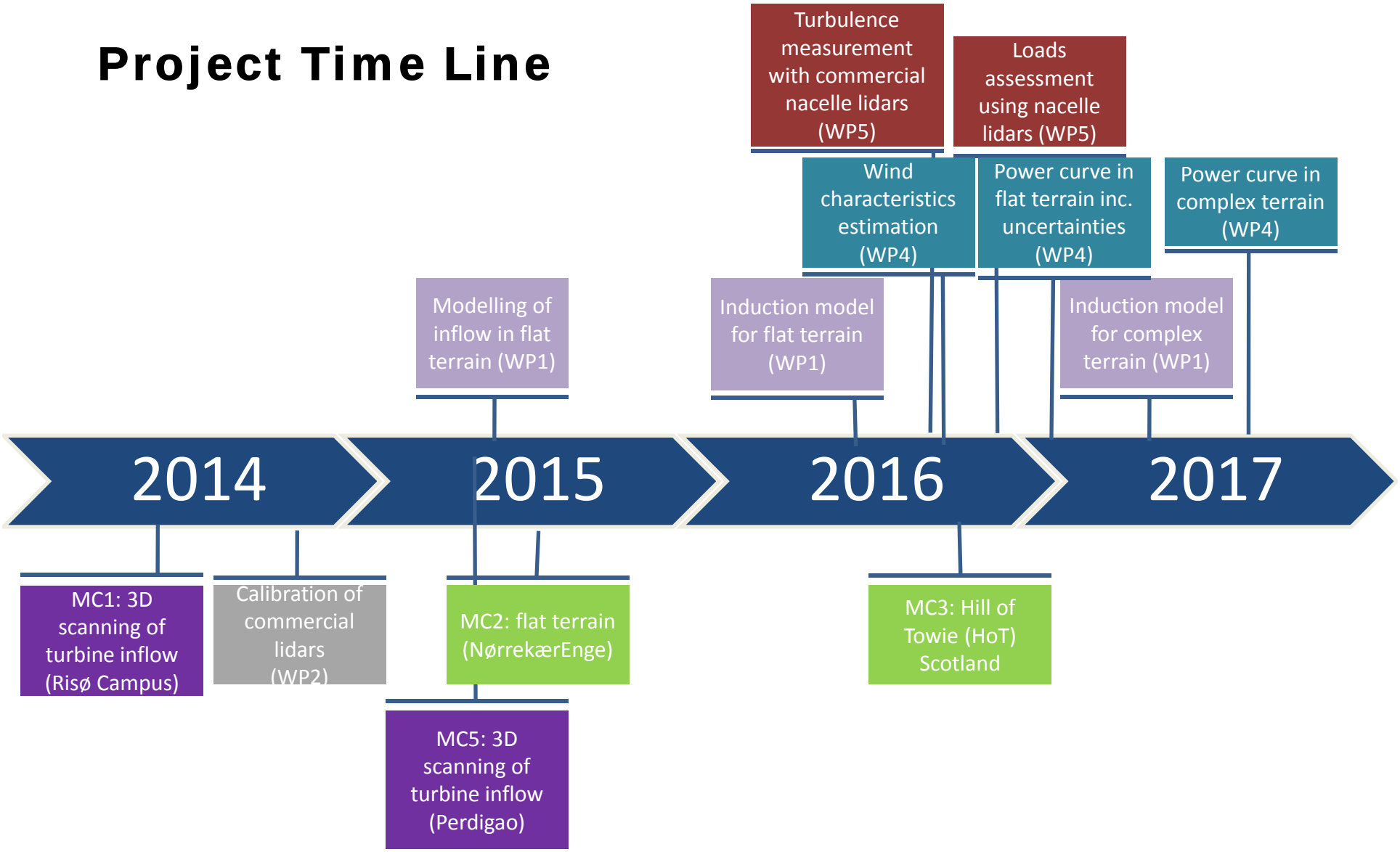
Project partners



Project Time Line



Have a good workshop ☺

www.UniTTe.dk