

Lidar-Assisted Control Working Group

Task 52

Wind Lidar: Large-Scale Deployment of Wind Lidar

David Schlipf

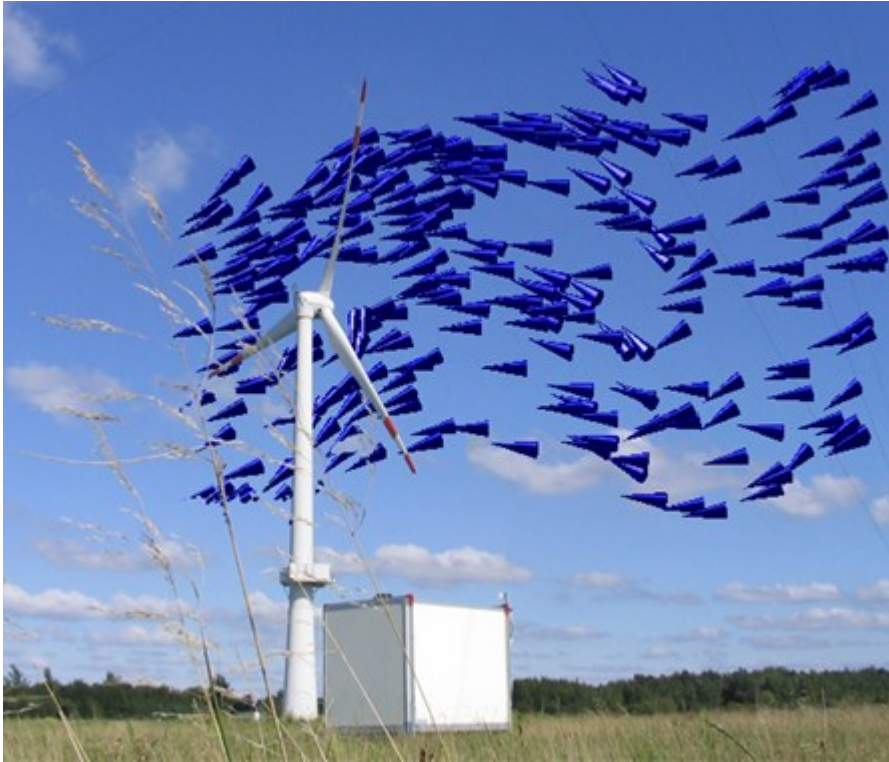
Flensburg University of Applied Sciences

Lunch Seminar

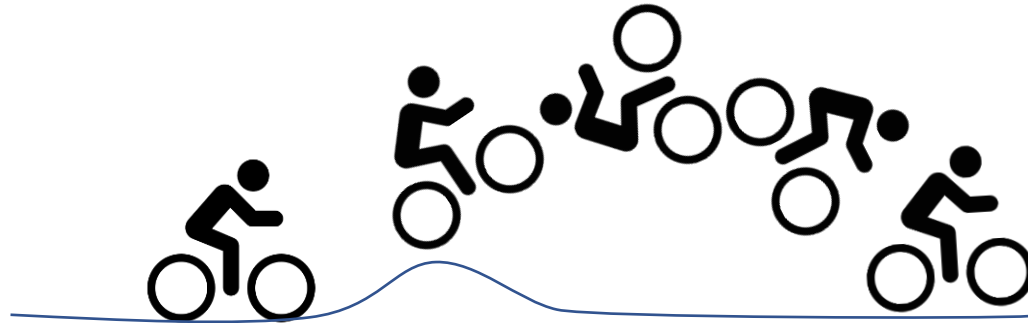
13.02.2023



Motivation for Lidar Assisted Control



- wind is changing over space and time
- conventional control reacts after impact
- lidar technology provides wind preview
- better control performance is expected



- Biggest market: one lidar for every wind turbine!
- Development over the last years showed:
It's not a wonder weapon, but still promising!
- Main task in IEA: make application easy!

LAC Working Group

- Participants

- Further participants very welcome
- Communication via Teams & emails



Last Name	First Name	Affiliation	Country
De Battista	Marc	Windey	China
Guo	Feng	sowento	Germany
Hailong	Zhu	Movelaser	China
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KAWABATA	Hirokazu	AIST	Japan
Kidambi	Anantha	OWC	Germany
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Raach	Steffen	sowento	Germany
Schild	Axel	IAV	Germany
Schlipf	David	Flensburg University of Applied Sciences	Germany
Shigang	Yao	Goldwind	China
Simley	Eric	NREL	USA
Steven	White	ZX lidars	UK
Zhang	Zhaoyu	Politecnico di Milano	Italy

- Goal: Recommended Practices on Lidar-Assisted Control

- Building up on existing documents

- Next Planned Activities

- More Webinars
- Get started with the RP
- LAC open-source tools
 - Improvement OpenFAST Lidar Simulator (Feng, Torque 2022)
 - Integrate baseline Feedforward controller into ROSCO (Feng & David, WESC, 2022)

Article
Optimizing Lidars for Wind Turbine Control Applications—Results from the IEA Wind Task 32 Workshop
 Eric Simley ^{1,*}, Holger Fürst ², Florian Haizmann ² and David Schlipf ²

Global Wind Summit 2018 IOP Publishing
 IOP Conf. Series: Journal of Physics: Conf. Series **1102** (2018) 012010 doi:10.1088/1742-6596/1102/1/012010

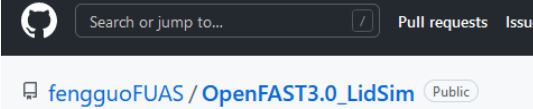
The Science of Making Torque from Wind (TORQUE 2020) IOP Publishing
 Journal of Physics: Conference Series **1618** (2020) 042029 doi:10.1088/1742-6596/1618/4/042029

IEA Wind Task 32: Best Practices for the Certification of Lidar-Assisted Control Applications

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IEA Wind Task 32 and Task 37: Optimizing Wind Turbines with Lidar-Assisted Control Using Systems Engineering

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