

Press Release

Deutsche WindGuard builds special wind tunnel for LiDAR Calibration on behalf of PTB

The National Metrology Institute of Germany profits of WindGuard's wind tunnel experience in new „PTB Competence Center Wind“

Varel/Braunschweig, 21.11.2017: Deutsche WindGuard Wind Tunnel Services developed a special wind tunnel for the national metrology institute of Germany (PTB). The wind tunnel will be used to calibrate a LiDAR-System newly developed by PTB. The LiDAR has a high spatial and temporal resolution. It will be used by PTB as a traceable reference standard to calibrate other remote sensing devices, like LiDARs and SoDARs, in the future.

The wind tunnel is erected on a platform at a height of 8meters in PTB's newly finished "Competence Center Wind". The PTB-LiDAR-System will be positioned below the platform so it can be calibrated in the test section of the wind tunnel. As a result it can be validated as a reference standard. This principle is worldwide unique.

As of now, the method for traceable calibration of wind remote sensing devices is to place the sensors next to a met mast with calibrated anemometers for a specified amount of time. This leads to higher measurement uncertainties.

"Constructional limits as well as our high expectations/sophisticated requirements with regards to flow quality required the design and construction of a new, special wind tunnel", explains Dr. Harald Müller, Head of the Working Group Fluid Flow Measuring Techniques at PTB. "We chose to work with Deutsche WindGuard, because this way we could access their valuable experience from the development and design of several wind tunnels with excellent flow quality."

"The special feature of this wind tunnel is that the LiDAR can be positioned below the test section. The distance to the test section is enough to calibrate the PTB-LiDAR against a LDA used as reference standard, which is placed in the wind tunnel", says

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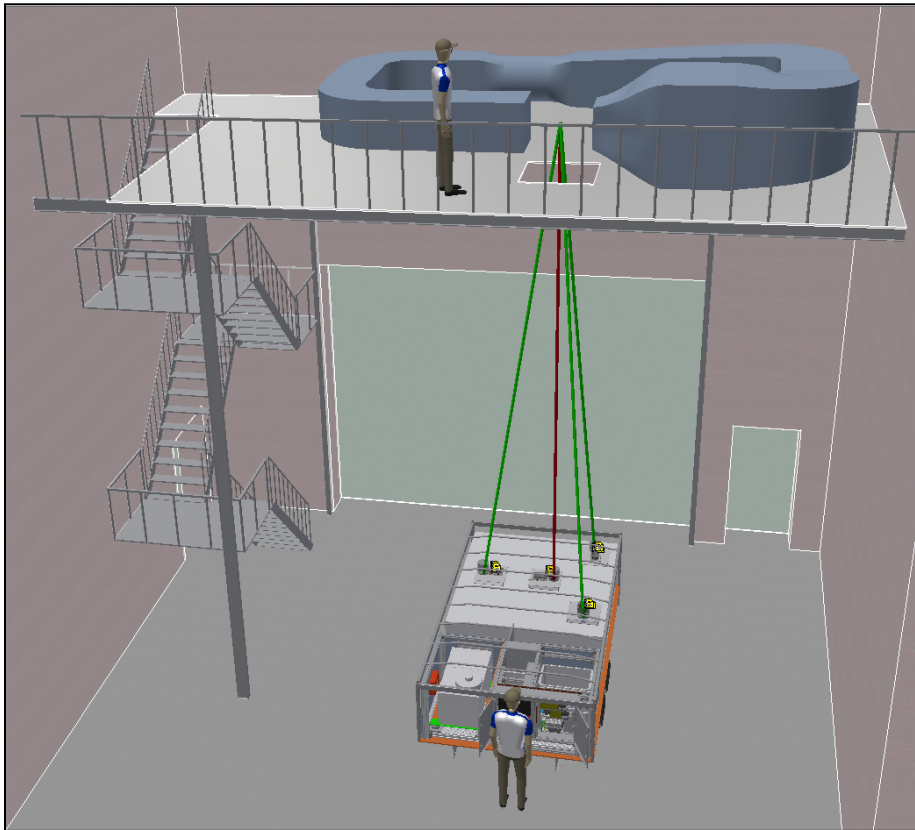
Dieter Westermann, Managing Director of Deutsche WindGuard Wind Tunnel Services GmbH and developer of the wind tunnel.

Technical Data for the WindGuard wind tunnel:

- Contraction ratio 1:5.7
- Settling chamber with screens and 7 honeycomb panels
- Turbulence intensity (15 m/s) = 0.1 %
- Maximum velocity: 28 m/s

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Schematic representation of the wind tunnel testing facility in PTB's "Competence Centre Wind", used to validate the newly developed PTB-LiDAR-System as a reference standard (commissioning of wind tunnel: 3rd quarter 2017; commissioning of testing facility: 2018.).

Publication and reprinting free of charge; it is politely requested that a specimen copy be sent to Deutsche WindGuard GmbH. For further information, please see: www.windtunnelcentre.com

Deutsche WindGuard Wind Tunnel Services GmbH

Deutsche WindGuard Wind Tunnel Services offers highest precision for wind sensor calibration and development. As an accredited calibration laboratory, Deutsche WindGuard Wind Tunnel Services GmbH is accepted by MEASNET and IECRE. Deutsche WindGuard Wind Tunnel Services GmbH is a part of Deutsche WindGuard Company Group. With four calibration wind tunnels, a variable density wind tunnel, a climatic wind tunnel, and the acoustically optimized large wind tunnel, Deutsche WindGuard Wind Tunnel Centre offers ideal conditions for measuring, testing and R&D.

In a complex energy market, Deutsche WindGuard is committed to providing extensive scientific, technical, and operational services, which are unbiased and manufacturer-independent. Deutsche WindGuard was founded in 2000. With the headquarters in Varel and subsidiaries in Germany, the United States and China, it employs more than 150 experienced experts.

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