3D WindScanner lidar measurements of wind and turbulence around wind turbines, buildings and bridges - DTU Orbit (14/12/2018)

**3D WindScanner lidar measurements of wind and turbulence around wind turbines, buildings and bridges: Paper**

WindScanner is a distributed research infrastructure developed at DTU with the participation of a number of European countries. The research infrastructure consists of a mobile technically advanced facility for remote measurement of wind and turbulence in 3D. The WindScanners provide coordinated measurements of the entire wind and turbulence fields, of all three wind components scanned in 3D space. Although primarily developed for research related to on- and offshore wind turbines and wind farms, the facility is also well suited for scanning turbulent wind fields around buildings, bridges, aviation structures and of flow in urban environments. The mobile WindScanner facility enables 3D scanning of wind and turbulence fields in full scale within the atmospheric boundary layer at ranges from 10 meters to 5 (10) kilometers. Measurements of turbulent coherent structures are applied for investigation of flow pattern and dynamical loads from turbines, building structures and bridges and in relation to optimization of the location of, for example, wind farms and suspension bridges. This paper presents our achievements to date and reviews briefly the state-of-the-art of the WindScanner measurement technology with examples of uses for wind engineering applications.

**General information**

State: Published  
Organisations: Department of Wind Energy, Meteorology & Remote Sensing  
Contributors: Mikkelsen, T. K., Sjöholm, M., Angelou, N., Mann, J.  
Number of pages: 14  
Publication date: 2017  
Peer-reviewed: Yes

**Publication information**

Journal: I O P Conference Series: Materials Science and Engineering  
Volume: 276  
Issue number: 1  
Article number: 012004  
ISSN (Print): 1757-8981  
Ratings:  
BFI (2018): BFI-level 1  
BFI (2017): BFI-level 1  
Scopus rating (2017): CiteScore 0.49 SJR 0.201 SNIP 0.573  
Web of Science (2017): Indexed yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 0.39 SJR 0.197 SNIP 0.535  
Web of Science (2016): Indexed yes  
BFI (2015): BFI-level 1  
Scopus rating (2015): CiteScore 0.22 SJR 0.197 SNIP 0.361  
Scopus rating (2014): CiteScore 0.18 SJR 0.206 SNIP 0.362  
Scopus rating (2013): CiteScore 0.16 SJR 0.205 SNIP 0.287  
ISI indexed (2013): ISI indexed no  
Scopus rating (2012): CiteScore 0.14 SJR 0.183 SNIP 0.257  
ISI indexed (2012): ISI indexed no  
Scopus rating (2011): CiteScore 0.1 SJR 0.23 SNIP 0.355  
ISI indexed (2011): ISI indexed no  
Scopus rating (2010): SJR 0.179 SNIP 0.155  
Original language: English  
Electronic versions:  
DOIs:  
10.1088/1757-899X/276/1/012004  
Source: FindIt  
Source-ID: 2394140999  
Research output: Research - peer-review » Conference article – Annual report year: 2017