

Title (en)  
ATMOSPHERIC MEASUREMENT SYSTEM

Title (de)  
ATMOSPHÄRENMESSSYSTEM

Title (fr)  
SYSTÈME DE MESURE ATMOSPHERIQUE

Publication  
**EP 2926164 A4 20151216 (EN)**

Application  
**EP 13858158 A 20131011**

Priority  
• US 201261732210 P 20121130  
• US 2013064693 W 20131011

Abstract (en)  
[origin: WO2014084973A1] An apparatus providing for simultaneous measurement of the wind upstream and downstream of a wind turbine uses either a single LIDAR beam split into two beams, each focused upstream or downstream of the windmill, or a multiple beam LIDAR with a first beam source aimed toward the upstream direction of the wind and a second beam source aimed at the downstream direction after the wind has passed through the wind turbine. The apparatus may also use LIDAR to measure wind direction and speed by making measurements along slightly different lines of sight, or by pointing the LIDAR in different directions. Two lines of sight allow measuring wind direction in the plane defined by the two lines of sight. Three non-coplanar lines of sight provide the information necessary to determine a full 3-dimensional wind velocity vector. Further, LIDAR may also be used to measure wind speed by estimating the wind velocity using inputs from both aerosol and molecular components.

IPC 8 full level  
**G01S 17/95** (2006.01); **G01S 7/481** (2006.01); **G01S 17/58** (2006.01); **G01S 17/87** (2020.01); **G01S 17/88** (2006.01); **G01S 17/89** (2020.01)

CPC (source: EP US)  
**G01S 7/481** (2013.01 - EP); **G01S 17/003** (2013.01 - EP); **G01S 17/87** (2013.01 - EP); **G01S 17/89** (2013.01 - EP US);  
**G01S 17/95** (2013.01 - EP US); **G01S 17/58** (2013.01 - EP); **Y02A 90/10** (2017.12 - EP)

Citation (search report)  
• [X] US 2006140764 A1 20060629 - SMITH DAVID A [GB], et al  
• [I] US 2012050750 A1 20120301 - HAYS PAUL BYRON [US], et al  
• [A] US 2007171396 A1 20070726 - HARRIS MICHAEL [GB], et al  
• [A] GB 2481461 A 20111228 - VESTAS WIND SYS AS [DK]  
• [A] JP 2006125961 A 20060518 - TOKYO ELECTRIC POWER CO  
• [A] US 2011106324 A1 20110505 - TSADKA SAGIE [IL], et al  
• [I] HASAGER C B ET AL: "Remote Sensing Observation Used in Offshore Wind Energy", IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE SENSING, IEEE, USA, vol. 1, no. 1, 1 March 2008 (2008-03-01), pages 67 - 79, XP011235634, ISSN: 1939-1404, DOI: 10.1109/JSTARS.2008.2002218  
• See references of WO 2014084973A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2014084973 A1 20140605**; EP 2926164 A1 20151007; EP 2926164 A4 20151216; EP 2955545 A1 20151216; EP 2955545 B1 20180718

DOCDB simple family (application)  
**US 2013064693 W 20131011**; EP 13858158 A 20131011; EP 15168724 A 20131011