

Resource Assessment 2011

EWEA Technology Workshops

Brussels, Belgium

10-11 May 2011

ISBN: 978-1-62748-468-8

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

All papers Copyright© 2011 by the respective author(s), and included in these proceedings by permission to the European Wind Energy Association.

All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the author(s) of the paper desired.

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SESSION 1

Mesoscale Dynamical and Statistical Downscaling, Climatology of Low-level Jets	1
<i>Daran Rife</i>	
Regional Wind Atlas	12
<i>Sami Niemela</i>	
General Mesoscale Modelling, High-frequency Wind Variability Offshore	22
<i>Claire Louise Vincent, Andrea Hahmann, Jake Badger, Xiaoli Guo Larsen, Soren Larsen</i>	

SESSION 2

Remote Sensing: Satellite Radar for Ocean Winds	35
<i>Charlotte Bay Hasager</i>	
Laser Remote Sensing for Wind Energy	45
<i>Jakob Mann</i>	
RES View of Remote Sensing Technology: 2011	63
<i>Jeremy Bass</i>	
Simulation of Availability of WINDCUBE® v2 Measurement under Different Atmospheric Conditions	67
<i>Rémy Parmentier</i>	

SESSION 3

Microscale and Forestry Modelling Over Complex Terrain: Current Best Practice and Challenges	68
<i>Peter Stuart</i>	
Atmospheric Stability in Wind Resource Assessment: Measurements and Modelling	83
<i>Javier Sanz Rodrigo</i>	
Key Findings from a Field Campaign Measuring Canopy Air Flows Over Complex Terrain	94
<i>Rosey Grant, Andrew Ross, Stephen Mobbs, Barry Gardiner</i>	
Meso/Microscale Atmospheric Model Integration: Benefits to the Wind Powercommunity and Associated Challenges	105
<i>Line Gulstad</i>	

SESSION 4

Wakes – An Overview of Current Issues	113
<i>Andrew Tindal</i>	
The Challenges of Wake Modelling and the Importance of Validation Data	120
<i>Gerard Schepers</i>	
Wake Effects Developments in the Offshore Wind Accelerator	135
<i>Brian Gribben, P. De Villiers, S. Y. Hui, C. Balcombe, G. Harrington, C. Pearce, D. Malins, P. Housley, O. Kristiansen, K. Bech</i>	
Large Eddy Simulation Study of Fully Developed Thermal Wind-turbine Array Boundary Layers	147
<i>Marc Calaf, Charles Meneveau, Johan Meyers, Marc B. Parlange</i>	
Wake and Flow Models	156
<i>Wolfgang Schlez</i>	

SESSION 5

Financing Wind Farms and the Impact of P50/P90 Yields	159
<i>Andrew Tindal</i>	
Comparison of Resource and Energy Yield Assessment Procedures	167
<i>Niels G. Mortensen, Hans E. Jorgensen</i>	
Author Index	