Comparing satellite SAR and wind farm wake models

The aim of the paper is to present offshore wind farm wake observed from satellite Synthetic Aperture Radar (SAR) wind fields from RADARSAT-1/-2 and Envisat and to compare these wakes qualitatively to wind farm wake model results. From some satellite SAR wind maps very long wakes are observed. These extend several tens of kilometres downwind e.g. 70 km. Other SAR wind maps show near-field fine scale details of wake behind rows of turbines. The satellite SAR wind farm wake cases are modelled by different wind farm wake models including the PARK microscale model, the Weather Research and Forecasting (WRF) model in high resolution and WRF with coupled microscale parametrization.

General information
State: Published
Organisations: Department of Wind Energy, Meteorology, Centro Nacional de Energías Renovables, CLS, IFREMER, Centro de Investigaciones Energéticas, Medio Ambientales y Tecnológicas
Number of pages: 10
Publication date: 2015
Peer-reviewed: Yes

Publication information
Journal: Journal of Physics: Conference Series (Online)
Volume: 625
Article number: 012035
ISSN (Print): 1742-6596
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 0.48 SJR 0.241 SNIP 0.447
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.45 SJR 0.24 SNIP 0.401
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 0.35 SJR 0.252 SNIP 0.374
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 0.32 SJR 0.264 SNIP 0.352
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 0.25 SJR 0.245 SNIP 0.293
ISI indexed (2013): ISI indexed no
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 0.33 SJR 0.293 SNIP 0.387
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
Scopus rating (2011): CiteScore 0.43 SJR 0.293 SNIP 0.356
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.288 SNIP 0.351
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.259 SNIP 0.346
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.264 SNIP 0.301
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.258 SNIP 0.399
Web of Science (2007): Indexed yes