

# IEEE JOURNAL OF SELECTED TOPICS IN APPLIED EARTH OBSERVATIONS AND REMOTE SENSING

A PUBLICATION OF THE IEEE GEOSCIENCE AND REMOTE SENSING SOCIETY  
AND THE IEEE COMMITTEE ON EARTH OBSERVATIONS

MARCH 2008

VOLUME 1

NUMBER 1

IJSTHZ

(ISSN 1939-1404)

---

## EDITORIAL

Scope of the New IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing ..... *E. F. LeDrew and K. S. Chen* 2

---

Introduction to the Issue on Earth Observations and Renewable Energy ..... *T. Ranchin and M. Schroedter-Homscheidt* 4

---

## PAPERS

Application of Satellite Sensor Data and Models for Energy Management ..... *E. Zell, J. Engel-Cox, R. Eckman, and P. Stackhouse, Jr.* 5

Case Studies on the Use of Solar Irradiance Forecast for Optimized Operation Strategies of Solar Thermal Power Plants .. *M. Wittmann, H. Breitzkreuz, M. Schroedter-Homscheidt, and M. Eck* 18

Reaching Consensus in the Definition of Photovoltaics Capacity Credit in the USA: A Practical Application of Satellite-Derived Solar Resource Data ..... *R. Perez, M. Taylor, T. Hoff, and J. P. Ross* 28

Geographic Aspects of Photovoltaics in Europe: Contribution of the PVGIS Website ..... *M. Šúri, T. Huld, T. Cebecauer, and E. D. Dunlop* 34

Measurements of Wind and Turbulence Profiles With Scanning Doppler Lidar for Wind Energy Applications ..... *R. Frehlich and N. Kelley* 42

Regional Mapping of the Offshore Wind Resource: Towards a Significant Contribution From Space-Borne Synthetic Aperture Radars ..... *P. Beaucauge, M. Bernier, G. Lafrance, and J. Choissard* 48

Synergetic Use of Radar and Optical Satellite Images to Support Severe Storm Prediction for Offshore Wind Farming .. *S. Bruschi, S. Lehner, and J. Schulz-Stellenfleth* 57

Remote Sensing Observation Used in Offshore Wind Energy ..... *C. B. Hasager, A. Peña, M. B. Christiansen, P. Astrup, M. Nielsen, F. Monaldo, D. Thompson, and P. Nielsen* 67

---

Information for Authors ..... 80

---