

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



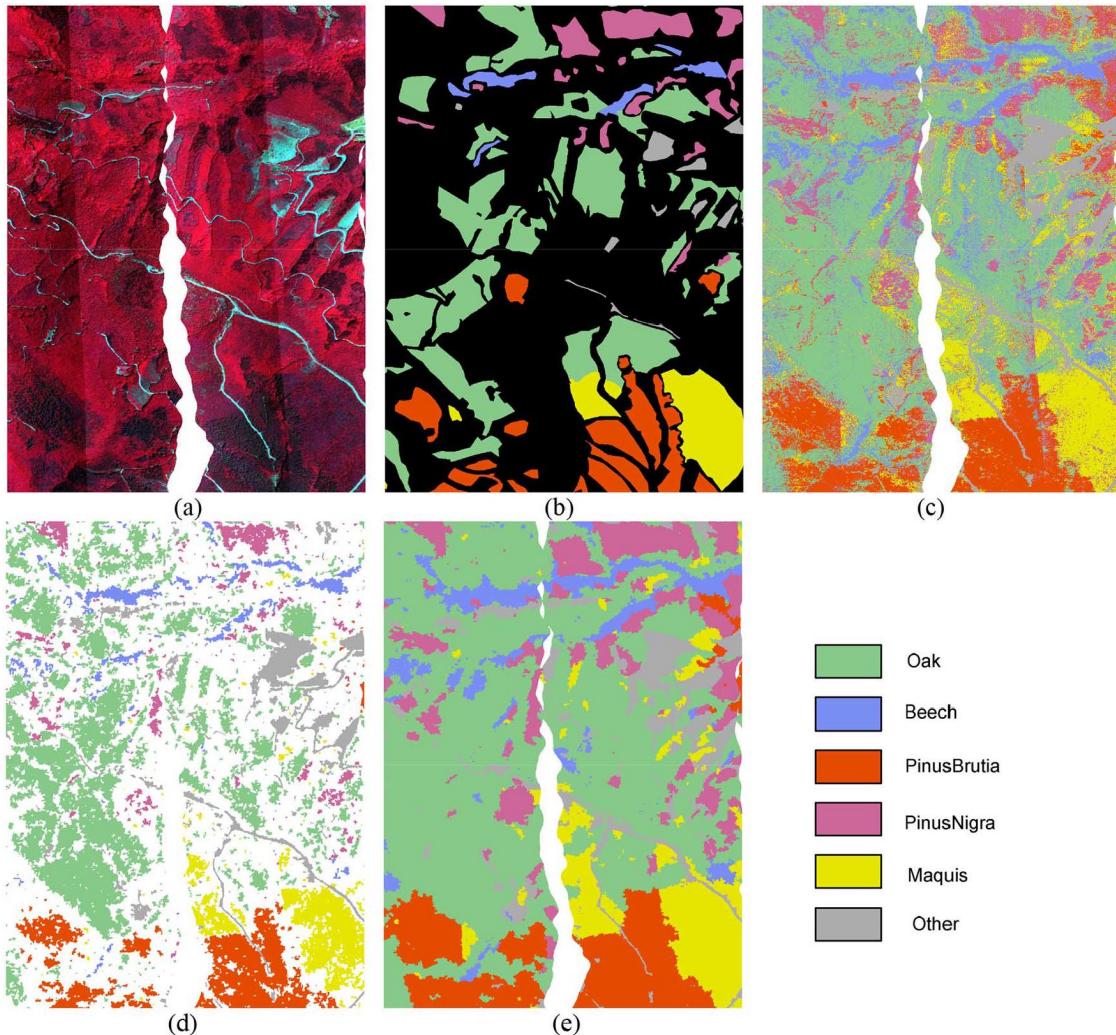
APRIL 2016

VOLUME 9

NUMBER 4

IJSTHZ

(ISSN 1939-1404)



Analysis for the Taxiarchis forest image. (a) Three-band false color composite. (b) Reference data: oak, beech, pinus brutia, pinus nigra, marquis, and artificial areas (other). (c) SVM pixel-based classification map. (d) Object cores of marked watersheds included in the initial Expansion set. (e) Final classification map obtained by the method detailed in “A Local Search-Based GeneSIS Algorithm for the Segmentation and Classification of Remote-Sensing Images,” by S. K. Mylonas, *et al.*, which begins on p. 1470.

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



APRIL 2016

VOLUME 9

NUMBER 4

IJSTHZ

(ISSN 1939-1404)

REGULAR PAPERS

An Improved Method for Deriving Daily Evapotranspiration Estimates From Satellite Estimates on Cloud-Free Days	B. Wu, W. Zhu, N. Yan, X. Feng, Q. Xing, and Q. Zhuang	1323
Analysis of Orientation Angle Shifts on the Polarimetric Data Using Radarsat2 Images	B. Souissi and M. Ouarzeddine	1331
Performances of a Microwave Tomographic Algorithm for GPR Systems Working in Differential Configuration	R. Persico, G. Pochanin, V. Ruban, A. Orlenko, I. Catapano, and F. Soldovieri	1343
Assimilation of Active and Passive Microwave Observations for Improved Estimates of Soil Moisture and Crop Growth	P.-W. Liu, T. Bongiovanni, A. Monsivais-Huertero, J. Judge, S. Steele-Dunne, R. Bindlish, and T. J. Jackson	1357
Freeze/Thaw Detection and Validation Using Aquarius' L-Band Backscattering Data	X. Xu, C. Derksen, S. H. Yueh, R. S. Dunbar, and A. Colliander	1370
Observations of Cutting Practices in Agricultural Grasslands Using Polarimetric SAR	K. Voormansik, T. Jagdhuber, K. Zalite, M. Noorma, and I. Hajnsek	1382
Adaptive Secondary Range Compression Algorithm in Geosynchronous SAR	C. Hu, Y. Tian, T. Zeng, T. Long, and X. Dong	1397
Multiple Scattering Effects With Cyclical Correction in Active Remote Sensing of Vegetated Surface Using Vector Radiative Transfer Theory	T.-H. Liao, S.-B. Kim, S. Tan, L. Tsang, C. Su, and T. J. Jackson	1414
Evaluation of Disaggregation Methods for Downscaling MODIS Land Surface Temperature to Landsat Spatial Resolution in Barax Test Site	M. Bisquert, J. M. Sánchez, and V. Caselles	1430
Large Polarimetric SAR Data Semi-Supervised Classification With Spatial-Anchor Graph	H. Liu, Y. Wang, S. Yang, S. Wang, J. Feng, and L. Jiao	1439
Man-Made Target Detection from Polarimetric SAR Data via Nonstationarity and Asymmetry	D. Xiang, T. Tang, Y. Ban, and Y. Su	1459
A Local Search-Based GeneSIS algorithm for the Segmentation and Classification of Remote-Sensing Images	S. K. Mylonas, D. G. Stavrokoudis, J. B. Theocaris, G. C. Zalidis, and I. Z. Gitas	1470
Application of a Combined Optical–Passive Microwave Method to Retrieve Soil Moisture at Regional Scale Over Chile	A. Santamaría-Artigas, C. Mattar, and J.-P. Wigneron	1493
Three-Dimensional Interferometric ISAR Imaging for the Ship Target Under the Bi-Static Configuration	Y. Wang and X. Li	1505
Unsupervised Quaternion Feature Learning for Remote Sensing Image Classification	V. Risojević and Z. Babić	1521

(Contents Continued on Page 1322)



Automatic Delineation of Clouds and Their Shadows in Landsat and CBERS (HRCC) Data	1532
..... <i>M. Harb, P. Gamba, and F. Dell'Acqua</i>	
A New Imaging Algorithm for Forward-Looking Missile-Borne Bistatic SAR	1543
..... <i>S. Chen, Y. Yuan, S. Zhang, H. Zhao, and Y. Chen</i>	
The Generalized Additive Model for the Assessment of the Direct, Diffuse, and Global Solar Irradiances Using SEVIRI Images, With Application to the UAE	1553
..... <i>T. B. M. J. Ouarda, C. Charron, P. R. Marpu, and F. Chebana</i>	
Comparison of Pleiades and LiDAR Digital Elevation Models for Terraces Detection in Farmlands	1567
..... <i>G. Sofia, J.-S. Bailly, N. Chehata, P. Tarolli, and F. Levavasseur</i>	
An RFI Index to Quantify the Contamination of SMOS Data by Radio-Frequency Interference	1577
..... <i>Y. Soldo, A. Khazaal, F. Cabot, and Y. H. Kerr</i>	
Application of SMOS Soil Moisture and Brightness Temperature at High Resolution With a Bias Correction Operator	1590
..... <i>K. C. Kornelsen, B. Davison, and P. Coulibaly</i>	
One-Class Oriented Feature Selection and Classification of Heterogeneous Remote Sensing Images	1606
..... <i>Md. A. Hossain, X. Jia, and J. A. Benediktsson</i>	
One-Class Classification of Remote Sensing Images Using Kernel Sparse Representation	1613
..... <i>B. Song, P. Li, J. Li, and A. Plaza</i>	
Relating Vegetation Dynamics to Climate Variables in Taiwan Using 1982–2012 NDVI3g Data	1624
..... <i>H. P. Tsai and M.-D. Yang</i>	
A Spatial Fuzzy Clustering Algorithm With Kernel Metric Based on Immune Clone for SAR Image Segmentation	1640
..... <i>R. Shang, P. Tian, L. Jiao, R. Stolkin, J. Feng, B. Hou, and X. Zhang</i>	
Parallel Computation of Aerial Target Reflection of Background Infrared Radiation: Performance Comparison of OpenMP, OpenACC, and CUDA Implementations	1653
..... <i>X. Guo, J. Wu, Z. Wu, and B. Huang</i>	
Integration of InSAR Analysis and Numerical Modeling for the Assessment of Ground Subsidence in the City of Lisbon, Portugal	1663
..... <i>J. Catalão, G. Nico, P. Lollino, V. Conde, G. Lorusso, and C. Silva</i>	
Mapping Global Fossil Fuel Combustion CO ₂ Emissions at High Resolution by Integrating Nightlight, Population Density, and Traffic Network Data	1674
..... <i>J. Ou, X. Liu, X. Li, and X. Shi</i>	
Optimizing the Temporal Scale in the Assimilation of Remote Sensing and WOFOST Model for Dynamically Monitoring Heavy Metal Stress in Rice	1685
..... <i>F. Liu, X. Liu, L. Wu, Z. Xu, and L. Gong</i>	
Integrating Landsat Imageries and Digital Elevation Models to Infer Water Level Change in Hoover Dam	1696
..... <i>K.-H. Tseng, C. K. Shum, J.-W. Kim, X. Wang, K. Zhu, and X. Cheng</i>	
Orthogonal Matching Pursuit for Enhanced Recovery of Sparse Geological Structures With the Ensemble Kalman Filter	1710
..... <i>F. Sana, K. Katterbauer, T. Y. Al-Naffouri, and I. Hoteit</i>	
The Effect of Vegetation on the Remotely Sensed Soil Thermal Inertia and a Two-Source Normalized Soil Thermal Inertia Model for Vegetated Surfaces	1725
..... <i>R. Zhang, J. Tian, S. Mi, H. Su, H. He, Z. Li, and K. Liu</i>	
Generalized Differential Morphological Profiles for Remote Sensing Image Classification	1736
..... <i>X. Huang, X. Han, L. Zhang, J. Gong, W. Liao, and J. A. Benediktsson</i>	
An Effective Emission Depth Model for Passive Microwave Remote Sensing	1752
..... <i>F.-C. Zhou, X. Song, P. Leng, and Z.-L. Li</i>	
