

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 2010

VOLUME 3

NUMBER 1

IJSTHZ

(ISSN 1939-1404)

Microwave Remote Sensing for Land Hydrology Research and Applications: Introduction to the Special Issue	3
..... E. G. Njoku, M. Moghaddam, D. Moller, and N. Molotch	

PAPERS

Preliminary Characterization of SWOT Hydrology Error Budget and Global Capabilities	S. Biancamaria, K. M. Andreadis, M. Durand, E. A. Clark, E. Rodriguez, N. M. Mognard, D. E. Alsdorf, D. P. Lettenmaier, and Y. Oudin	6
Estimating River Depth From Remote Sensing Swath Interferometry Measurements of River Height, Slope, and Width ..	M. Durand, E. Rodríguez, D. E. Alsdorf, and M. Trigg	20
Soil Moisture Sensitivity to NRL-Blend High-Resolution Precipitation Products: Analysis of Simulations With Two Land Surface Models	F. J. Turk, G. V. Mostovoy, and V. G. Anantharaj	32
Impact of Accuracy, Spatial Availability, and Revisit Time of Satellite-Derived Surface Soil Moisture in a Multiscale Ensemble Data Assimilation System	M. Pan and E. F. Wood	49
Evaluating the Utility of Remotely Sensed Soil Moisture Retrievals for Operational Agricultural Drought Monitoring ..	J. D. Bolten, W. T. Crow, X. Zhan, T. J. Jackson, and C. A. Reynolds	57
Impacts of Spatial Scaling Errors on Soil Moisture Retrieval Accuracy at L-Band	W. L. Crosson, A. S. Limaye, and C. A. Laymon	67
The Effect of Rain and Flooding Events on AMSR-E Signatures of La Plata Basin, Argentina	P. Ferrazzoli, R. Rahmoune, F. Moccia, F. Grings, M. Salvia, M. Barber, V. Douna, H. Karszenbaum, A. Soldano, D. Goniadzki, G. Parmuchi, C. Montenegro, P. Kandus, and M. Borro	81
GPS Multipath and Its Relation to Near-Surface Soil Moisture Content	K. M. Larson, J. J. Braun, E. E. Small, V. U. Zavorotny, E. D. Gutmann, and A. L. Bilich	91

(Contents Continued on Page 2)

A Physical Model for GPS Multipath Caused by Land Reflections: Toward Bare Soil Moisture Retrievals	100
..... V. U. Zavorotny, K. M. Larson, J. J. Braun, E. E. Small, E. D. Gutmann, and A. L. Bilich	
Satellite Microwave Remote Sensing of Daily Land Surface Air Temperature Minima and Maxima From AMSR-E	111
... L. A. Jones, C. R. Ferguson, J. S. Kimball, K. Zhang, S. T. K. Chan, K. C. McDonald, E. G. Njoku, and E. F. Wood	
Remote Sensing Vegetation Hydrological States Using Passive Microwave Measurements	124
On the Relationship Between Temperature and MODIS Snow Cover Retrieval Errors in the Western U.S.	
..... J. Dong and C. Peters-Lidard	132
Assessment of the NASA AMSR-E SWE Product	141
..... M. Tedesco and P. S. Narvekar	

Information for Authors	160
-------------------------------	-----

About the Cover: (a) Geographical distribution of the top 1-m soil water content (averaged for August 2008) and (b) its change from 1 April to 31 August 2008, simulated with the Noah (upper frame) and Mosaic (lower frame) land surface models, using the “All Satellites” NRL-Blend precipitation product. Positive values shown by brown color in right frames stand for soil drying and negative (green/blue) for soil moistening. The thick line outlines the boundary of the Arkansas-Red River basin. For more information, see “Soil Moisture Sensitivity to NRL-Blend High-Resolution Precipitation Products: Analysis of Simulations With Two Land Surface Models,” by Turk *et al.*, which begins on p. 32.