Contents

Symposium Committees ix
Conference Committee xi
Introduction xiii

SESSION 1  ATMOSPHERIC SOUNDING, RETRIEVALS, AND INFORMATION CONTENT

7857 02 Eight years of AIRS (Invited Paper) [7857-01]
S.-Y. Lee, T. Pagano, M. Chahine, E. Fetzer, Jet Propulsion Lab. (United States)

7857 03 IR ultraspectral remote sensing: efficient physical-statistical nonlinear sounding retrieval algorithms [7857-02]
W. Smith, Sr., Univ. of Wisconsin-Madison (United States) and Hampton Univ. (United States); S. Kireev, Hampton Univ. (United States); E. Weisz, Univ. of Wisconsin-Madison (United States); Y. Jian, M. Yesalusky, Hampton Univ. (United States); A. Larar, NASA Langley Research Ctr. (United States); H. Revercomb, Univ. of Wisconsin-Madison (United States)

7857 04 How well can infrared sounders observe the atmosphere and surface through clouds? [7857-03]
D. K. Zhou, A. M. Larar, X. Liu, NASA Langley Research Ctr. (United States); W. L. Smith, Hampton Univ. (United States) and Univ. of Wisconsin-Madison (United States); L. L. Strow, Univ. of Maryland, Baltimore County (United States); P. Yang, Texas A&M Univ. (United States)

7857 05 Porting and testing NPOESS CrIMSS EDR algorithms [7857-04]
X. Liu, NASA Langley Research Ctr. (United States); S. Kizer, Science Systems and Applications, Inc. (United States); A. Larar, NASA Langley Research Ctr. (United States); D. Zhou, Science Systems and Applications, Inc. (United States); W. Smith, Hampton Univ. (United States); C. Barnet, NOAA Ctr. for Satellite Applications (United States); M. Divakarla, IM Systems Group, Inc. (United States); G. Guo, PSGS (United States); B. Blackwell, V. Leslie, L. Jairam, MIT Lincoln Lab. (United States); K. St. Germain, NOAA NPOESS Integrated Program Office (United States); R. Lynch, Atmospheric and Environmental Research, Inc. (United States)

7857 06 Spectral resolution and coverage impact on advanced sounder information content [7857-05]
A. M. Larar, X. Liu, D. K. Zhou, NASA Langley Research Ctr. (United States); W. L. Smith, Hampton Univ. (United States) and Univ. of Wisconsin-Madison (United States)

7857 08 Retrieval of minor constituents from thermal infrared spectra observed by GOSAT TANSO-FTS sensor [7857-07]
R. Imasu, Y. Hayashi, A. Inagoya, The Univ. of Tokyo (Japan); N. Saithoh, Chiba Univ. (Japan); K. Shiomi, Japan Aerospace Exploration Agency (Japan)
Aerosol optical properties derived from solar spectrum measurements and their application to atmospheric correction of satellite data [7857-08]
N. Monago, S. Miyazawa, K. Kuriyama, H. Kuze, Chiba Univ. (Japan)

DATA PROCESSING, COMPRESSION, AND FUSION

Preprocessing of hyperspectral imagery with consideration of smile and keystone properties [7857-10]
N. Yokoya, N. Miyamura, A. Iwasaki, The Univ. of Tokyo (Japan)

Fast compression implementation for hyperspectral sensor [7857-12]
H. Hihara, J. Yoshida, J. Ishida, NEC TOSHIBA Space Systems Ltd. (Japan); J. Takada, NEC Information Systems Ltd. (Japan); Y. Senda, NEC Corp. (Japan); M. Suzuki, T. Seki, S. Ichikawa, Japan Aerospace Exploration Agency (Japan); N. Ohgi, Japan Resource Observation System and Space Utilization Organization (Japan)

REMOTE SENSING AIR QUALITY APPLICATIONS

Application of THEOS for PM10 mapping over Penang Island, Malaysia [7857-15]
H. S. Lim, M. Z. MatJafri, K. Abdullah, Univ. Sains Malaysia (Malaysia)

Performance of satellite regional bio-optical algorithms depending on relationships between chlorophyll-a and dissolved organic matter concentrations [7857-16]
O. A. Bukin, Maritime State Univ. (Russian Federation); P. A. Salyuk, V.I. Ilichev Pacific Oceanological Institute (Russian Federation); A. N. Pavlov, Institute for Automation and Control Processes (Russian Federation); I. Stepochkin, Maritime State Univ. (Russian Federation); I. A. Golik, V.I. Ilichev Pacific Oceanological Institute (Russian Federation)

Tuning of hyperspectral bio-optical algorithms in the Peter the Great Bay [7857-17]
P. A. Salyuk, V.I. Ilichev Pacific Oceanological Institute (Russian Federation); O. A. Bukin, I. E. Stepochkin, Maritime State Univ. (Russian Federation); V. A. Krikun, V.I. Ilichev Pacific Oceanological Institute (Russian Federation); A. N. Pavlov, Institute for Automation and Control Processes (Russian Federation)

FUTURE SENSORS: CALIBRATION AND SENSOR DESIGN

On-orbit absolute temperature calibration using multiple phase change materials: overview of recent technology advancements [7857-19]
F. A. Best, D. P. Adler, C. Pettersen, H. E. Revercomb, J. H. Perepezko, Univ. of Wisconsin-Madison (United States)

The University of Wisconsin Space Science and Engineering Center Absolute Radiance Interferometer (ARI) [7857-20]
J. K. Taylor, H. E. Revercomb, Univ. of Wisconsin-Madison (United States); H. Buijs, F. J. Grandmont, ABB-Bomem Inc. (Canada); P. J. Gero, F. A. Best, D. C. Tobin, R. O. Knuteson, D. D. LaPorte, R. Cline, M. Schwarz, J. Wong, Univ. of Wisconsin-Madison (United States)
7857 0L  On-orbit absolute blackbody emissivity determination using the heated halo method [7857-21]

7857 0M  The functional evaluation model for the on-board hyperspectral radiometer [7857-22]
T. Kawashima, Y. Narimatsu, H. Inada, NEC Corp. (Japan); J. Ishida, K. Hamada, Y. Ito, J. Yoshioka, NEC Toshiba Space Systems, Ltd. (Japan); N. Ohgi, K. Tatsumi, H. Harada, T. Kawanishi, F. Sakuma, Japan Resources Observation System and Space Utilization Organization (Japan); A. Iwasaki, The Univ. of Tokyo (Japan)

7857 0N  Design and applications of space-borne imaging spectrometer based on acousto-optic tunable filter (AOTF) [7857-23]
J. Wang, Z. He, R. Shu, Shanghai Institute of Technical Physics (China)

7857 0O  Hyperspectral and multispectral sensors for remote sensing [7857-24]
J. Miller, S. Kullar, D. Cochrane, N. O. A. Lomako, C. Draijer, DALSA Corp. (Canada)

SESSION 5  REMOTE SENSING LAND APPLICATIONS

7857 0Q  Remotely based monitoring of the mangroves over Penang Island, Malaysia [7857-27]
B. C. Beh, M. Z. MatJafri, H. S. Lim, Univ. Sains Malaysia (Malaysia)

7857 0S  Performances of frequency-based contextual classifier in land use/cover classification using high resolution satellite images [7857-35]
M. R. Mustapha, H. S. Lim, M. Z. MatJafri, F. M. Hassan, Univ. Sains Malaysia (Malaysia)

POSTER SESSION

7857 0T  Enhancing remote sensing images by adjusting histogram globally and locally [7857-31]
F. Chen, X. Li, F. Li, J. Liu, J. Yang, Ctr. for Earth Observation and Digital Earth (China)

7857 0U  Pixel discontinuity handling of ortho-rectification images for airborne pushbroom imager [7857-32]
J.-Y. Lai, M.-F. Chen, T.-H. Wei, C.-Y. Chan, T.-M. Huang, Instrument Technology Research Ctr. (Taiwan)

7857 0W  Defective CCDs detection and image restoration based on inter-band radiance interpolation for hyperspectral imager [7857-36]
M.-F. Chen, J.-Y. Lai, L.-J. Lee, T.-M. Huang, Instrument Technology Research Ctr. (Taiwan)

7857 0X  Simulation of spectral effects of Asian dusts on the AIRS radiances and its application to retrieval of dust properties [7857-37]
H.-J. Han, B.-J. Sohn, Seoul National Univ. (Korea, Republic of); H.-L. Huang, E. Weisz, Univ. of Wisconsin-Madison (United States)
Remote sensing Image classification method based on evidence theory and decision tree [7857-38]
X. Li, Graduate Univ. of the Chinese Academy of Sciences (China) and Yantai Institute of Coastal Zone Research (China); Q. Xing, Yantai Institute of Coastal Zone Research (China); L. Kang, Graduate Univ. of the Chinese Academy of Sciences (China) and Yantai Institute of Coastal Zone Research (China)

Effects of N fertilization on the relationship between photosynthetic light use efficiency and photochemical reflectance index of wetland vegetation [7857-41]
Q. Cheng, X. Wu, Zhejiang Gongshang Univ. (China)

Key technologies of land use information extraction based upon multisource remote sensing data: a case study of hilly-plain transition region in the middle and lower reaches of the Yellow River [7857-43]
H. Lu, Henan Univ. (China) and United Nations Univ. (Japan); G. Liu, Henan Univ. (China)

Pose parameter extraction of corn canopy remote sensing images based on parallel multi-ocular imaging [7857-44]
X. Li, Heilongjiang Bayi Agriculture Univ. (China); Y. Zhang, China Agricultural Univ. (China); J. Zhu, Heilongjiang Bayi Agriculture Univ. (China); R. Zhao, M. Li, China Agricultural Univ. (China)

Evaluation of land use classification accuracy based upon TM and CBERS-02B HR data fusion [7857-45]
G. Liu, Henan Univ. (China); H. Lu, Henan Univ. (China) and United Nations Univ. (Japan)

Predicting chlorophyll content of greenhouse tomato with ground-based remote sensing [7857-46]
Y. Ding, China Agricultural Univ. (China) and Lanzhou City Univ. (China); M. Li, S. Li, D. An, China Agricultural Univ. (China)

Study on the spectral characteristics of the damaged rice under brown planthopper, Nilaparvata lugens [7857-47]
X. Wu, Q. Cheng, Zhejiang Gongshang Univ. (China)

Mixed-spectrum generation mechanism analysis of dispersive hyperspectral imaging for improving environmental monitoring of coastal waters [7857-48]
F. Xie, G. Xiao, H. Qi, R. Shu, J. Wang, Y. Xue, Shanghai Institute of Technical Physics (China)

Variable rate fertilization based on spectral index and remote sensing [7857-50]
S. Li, M. Li, Y. Ding, R. Zhao, China Agricultural Univ. (China)

Study on space-borne LWIR FPA Imaging system [7857-51]
C. Li, Y. Liu, J. Wang, Shanghai Institute of Technical Physics (China)

Aerosol optical thickness retrieval by using a handheld spectroradiometer over Penang Island, Malaysia [7857-52]
H. S. Lim, M. Z. Mat-Jafri, K. Abdullah, N. M. Saleh, Univ. Sains Malaysia (Malaysia)
Research on the sequential images registration of the temporally and spatially modulated Fourier transform imaging spectrometer [7857-55]
X. Zhang, Q. Wang, Beijing Univ. of Aeronautics & Astronautics (China); Z. Zhou, Univ. of Science and Technology of China (China); C. Sun, Beijing Univ. of Aeronautics & Astronautics (China)

Land cover mapping based on a frequency based contextual classifier from remote sensing data over Penang Island, Malaysia [7857-56]
H. S. Lim, M. Z. MatJafri, K. Abdullah, Univ. Sains Malaysia (Malaysia)

Winter wheat nutrition diagnosis under different N treatments based on multispectral images and remote sensing [7857-57]
R. Zhao, M. Li, S. Li, Y. Ding, China Agricultural Univ. (China)

Assessment of ALOS PALSAR data for land cover/land use mapping in Malaysia [7857-58]
C. K. Sim, K. Abdullah, M. Z. MatJafri, H. S. Lim, Univ. Sains Malaysia (Malaysia)

A hyperspectral imager with adjustable spectral selectivity based on AOTF [7857-61]
J. Liu, R. Shu, Y. Ma, J. Wang, Shanghai Institute of Technical Physics (China)

E-AERI calibration performance certification [7857-62]

Spectral feature extraction and modeling of soil total nitrogen content based on NIR technology and wavelet packet analysis [7857-63]
L. Zheng, M. Li, X. An, L. Pan, H. Sun, China Agricultural Univ. (China)

Research on the classification of karst rocky desertification based on hyperspectral remote sensing images [7857-65]
K. Zhu, Y. An, Y. Zhang, Guizhou Normal Univ. (China)

Author Index