whispers

**4th Workshop on
Hyperspectral Image and Signal Processing :
Evolution in Remote Sensing**

4 - 7 June 2012, Shanghai, China

Workshop Program

Monday, June 4

09:00 – 12:00 14:00 – 17:00	Registration in Tongji Days Hotel
14:00 – 18:00	
tutorial 1	Spectral Unmixing of Hyperspectral Data
tutorial 2	Feature Mining from Hyperspectral Data
18:30 – 20:30	Welcome Reception Dinner

Tuesday, June 5

07:30 – 08:30	Registration
08:30 – 09:00	Opening of the workshop
09:00 – 10:00	Plenary 1 – The Progress of Hyperspectral Remote Sensing in China
10:00 – 10:30	Coffee break
10:30 – 12:10	
tue-o-1-a	Classification (1)
tue-o-1-b	Vegetation (1)
12:10 – 13:30	Lunch break
13:30 – 15:10	
tue-o-2-a	Geology, Mineralogy and Mining Industry (1)
tue-o-2-b	Anomaly and Target Detection
15:10 – 15:40	Coffee break
15:40 – 17:40	
tue-o-3-a	Unmixing (1)
tue-o-3-b	Oceans and Water Bodies
19:30 – 21:00	Meeting of the GRSS Standardized Algorithm, Data, and Evaluation (SADE) Working group in Tongji Days Hotel

Wednesday, June 6

08:30 – 09:30	Plenary 2 - Planetary Hyperspectral Imagery, from remote characterizations down to microscopic in situ analysis
09:30 – 11:10	
wed-o-1-a	Unmixing (2)
wed-o-1-b	Extraterrestrial Sensing / Change Detection
11:10 – 11:40	Coffee break
11:40 – 13:00	
wed-p	Poster
13:00 – 14:00	Lunch break
14:00 – 15:40	
wed-o-2-a	Classification (2)
wed-o-2-b	Advanced Models and Concepts in HS Data Processing
15:40 – 16:10	Coffee break
16:10 – 17:30	
wed-o-3-a	Infrared and Thermal Sensing
wed-o-3-b	Calibration, Atmospheric Correction and Restoration
19:00 – 22:00	Conference Banquet

Thursday, June 7

08:30 – 09:30	Plenary 3 - Monitoring Canopy Chemistry with Next Generation Imaging Spectrometer from Satellites
09:30 – 11:10	
thu-o-1-a	Vegetation (3)
thu-o-1-b	Noise Reduction
11:10 – 11:40	Coffee break
11:40 – 13:00	
thu-p	Poster
13:00 – 14:00	Lunch break
14:00 – 15:40	
thu-o-2-a	Classification (3)
thu-o-2-b	Geology, Mineralogy and Mining Industry (2)
15:40 – 16:10	Coffee break
16:10 – 18:10	
thu-o-3-a	Band Selection, Feature Extraction
thu-o-3-b	Unmixing (3)

Locations

Registration
- June 4: Meeting Room 2, 3rd Floor, Tongji Days Hotel
- June 5: (and after): meeting room, 1st Floor, Yifu Building

Tutorials
- College of Civil Engineering, Tongji University
  - Tutorial 1: Room A113
  - Tutorial 2: Room B504

Plenary sessions
- main conference room, 1st floor, Yifu Building

Parallel sessions daily
- 1 : main conference room, 1st floor, Yifu Building
- 2 : meeting room, 2st floor, Yifu Building

Exhibitions and posters
- meeting room, 1st Floor, Yifu Building

SADE group meeting on June 5
- Tongji Days Hotel (room number will be announced on site)

Coffee break
- lobby, 1st floor, Yifu Building (just outside the meeting room)

Welcome reception dinner on June 4
- Room 35, 3rd Floor, Tongji Days Hotel

Daily lunch and dinner buffet
- Sunshine Cafeteria, 2nd Floor, Tongji Days Hotel
  - Lunch time: **12:15pm-13:45pm**
  - Dinner time: **18:15pm-19:45pm**

Banquet on June 6
- Revolving Restaurant, the Oriental Pearl Tower
- Buses will leave from Tongji Days Hotel at 18:00pm, and come back at 22:15pm from the parking area of the Tower.

Time		June 4, 2012 Monday			June 5, 2012 Tuesday		June 6, 2012 Wednesday		June 7, 2012 Thursday	
07:30	08:00				Registration [Place E]					
08:00	08:30									
08:30	09:00				Opening of the Workshop [Place C]		Plenary 2 [Place C]		Plenary 3 [Place C]	
09:00	09:30	Registration [Place A]			Plenary 1 [Place C]					
09:30	10:00						Unmixing (2) [Place C]	Extrater.Sensing / Change Detection [Place D]	Vegetation(3) [Place C]	Noise Reduction [Place D]
10:00	10:30				Coffee Break					
10:30	11:10				Classification(1) [Place C]	Vegetation(1) [Place D]				
11:10	11:40						Coffee Break		Coffee Break	
11:40	12:10				Lunch break (service 12:15pm-13:45pm)		Poster(1) [Place E]		Poster(2) [Place E]	
12:10	13:00									
13:00	13:30						Lunch Break (service 12:15pm-13:45pm)		Lunch Break (service 12:15pm-13:45pm)	
13:30	14:00				Geology, Mineralogy and Mining Industry [Place C]	Anomaly and Target Detection [Place D]				
14:00	15:10	Registration [Place A]	Tutorial 1 [Place B] Room A113	Tutorial 2 [Place B] Room B504			Classification(2) [Place C]	Advanced Models and Concepts in HS Data Processing [Place D]	Classification(3) [Place C]	Geology, Mineralogy and Mining Industry(2) [Place D]
15:10	15:40				Coffee Break					
15:40	16:10				Unmixing(1) [Place C]	Oceans and Water Bodies [Place D]	Coffee Break		Coffee Break	
16:10	17:00						Infrared & Thermal Sensing [Place C]	Calibration, Atm. Correction & Restoration [Place D]	Band Selection Feature Extraction [Place C]	Unmixing(3) [Place D]
17:00	17:30									
17:30	18:10									
18:10	18:30									
18:30	19:00	Welcome Reception Dinner Room 35, 3rd Floor, Tongji Days Hotel								
19:00	19:30						Conference Banquet Revolving Restaurant, the Oriental Pearl Tower Buses will leave from Tongji Days Hotel at 18:00pm, and come back at 22:15pm from the parking area of the Tower.			
19:30	20:30				Meeting of the GRSS SADE Tongji Days Hotel (room number will be announced on site)					
20:30	21:00									
21:00	22:00									

Place A : Meeting Room 2, 3rd Floor, Tongji Days Hotel

Place B : College of Civil Engineering, Tongji University

Place C : main conference room, 1st floor, Yifu Building

Plade D : meeting room, 2st floor, Yifu Building

Place E : meeting room, 1st Floor, Yifu Building

Coffee Break : lobby, 1st floor, Yifu Building (just outside the meeting room)

Lunch break : Sunshine Cafeteria, 2nd Floor, Tongji Days Hotel

07:30 – 08:30   Registration

08:30 – 09:00   Opening of the workshop

09:00 – 10:00   Plenary 1
The Progress of Hyperspectral Remote Sensing in China
Professor Qingxi Tong, Peking University, China
Session chair: Bing Zhang, CEODE, Chinese Academy of Sciences

10:00 – 10:30   Coffee break

10:30 – 12:10   Session tue-o-1-a
Classification (1)
Session Chairs: Xiaohua Tong, Tongji University, China
                          Miguel Velez-Reyes, University of Puerto Rico

Session tue-o-1-b
Vegetation (1)
Session Chairs: Olaf Niemann, University of Victoria, Canada
                          Peijun Du, Nanjing University, China

12:10 – 13:30   Lunch break

13:30 – 15:10   Session tue-o-2-a
Geology, Mineralogy and Mining Industry (1)
Session Chairs: Zhizhong Li, China Geological Survey
                          Shengbo Chen, Jilin University, China

Session tue-o-2-b
Anomaly and Target Detection
Session Chairs: Robert Sundberg, Spectral Sciences, Inc. , USA
                          Bing Zhang, CEODE, Chinese Academy of Sciences

15:10 – 15:40   Coffee break

15:40 – 17:40   Session tue-o-3-a
Unmixing (1)
Session Chairs: Mario Parente, University of Massachusetts, USA
                          Antonio Plaza, University of Extremadura, Spain
Session tue-o-3-b
Oceans and Water Bodies
Session Chairs: Bin Luo, State Key Lab of Information Enigneering in Surveying,
                          Mapping, and Remote Sensing, Wuhan University, China
                          Michael Sears, University of the Witwatersrand, South Africa

19:30 – 21:00   **Meeting of the GRSS Standardized Algorithm, Data, and Evaluation (SADE) Working**
                group in **Tongji Days Hotel**. The group will be focused on precisely defining specific
                problems in HISP and welcome all who would like to contribute.

07:30 – 08:30   **Registration**

08:30 – 09:00   Opening of the workshop

09:00 – 10:00   **Plenary 1**
The Progress of Hyperspectral Remote Sensing in China
Professor Qingxi Tong, Peking University, China
Session chair: Bing Zhang, CEODE, Chinese Academy of Sciences

10:00 – 10:30   **Coffee break**

10:30 – 12:10   **Session tue-o-1-a**
Classification (1)
Session Chairs: Xiaohua Tong, Tongji University, China
                               Miguel Velez-Reyes, University of Puerto Rico

10:30 – 10:50   DISCRIMINATIVE DICTIONARY DESIGN USING LVQ FOR HYPERSPECTRAL IMAGE
CLASSIFICATION
Yi Chen, Nasser M. Nasrabadi, and Trac D. Tran

10:50 – 11:10   AN NOVEL ACTIVE LEARNING STRATEGY FOR HYPERSPECTRAL IMAGE
CLASSIFICATION
Qian Shi, Liangpei Zhang , Bo Du

11:10 – 11:30   HYPERSPECTRAL CLASSIFICATION USING SPECTRAL MAGNITUDE AND GRADIENT
Xiya Zhang, Haiqing Xu and Peijun Li

11:30 – 11:50   LOCALITY-PRESERVING DISCRIMINANT ANALYSIS AND GAUSSIAN MIXTURE
MODELS FOR SPECTRAL-SPATIAL CLASSIFICATION OF HYPERSPECTRAL IMAGERY
Zhen Ye, Saurabh Prasad, Wei Li, James E. Fowler, Mingyi He

11:50 – 12:10   CLASSIFICTION FOR HYPERSPECTRAL IMAGERY BASED ON NONLOCAL WEIGHTED
JOINT SPARSITY MODEL
Jiayi Li, Hongyan Zhang, Yuancheng Huang, and Liangpei Zhang

Session tue-o-1-b
Vegetation (1)
Session Chairs: Olaf Niemann, University of Victoria, Canada
                               Peijun Du, Nanjing University, China

10:30 – 10:50   UNMANNED AERIAL VEHICLE (UAV) HYPERSPECTRAL REMOTE SENSING FOR
DRYLAND VEGETATION MONITORING
Jessica J. Mitchell, Nancy F. Glenn, Matthew O. Anderson, Ryan C. Hruska

10:50 – 11:10   A TEMPORAL INVESTIGATION OF LEAF SPECTROSCOPY FOR GRAPE VARIETY
DISCRIMINATION
Diana Parton, Geoffrey S. Quinn, Fabio Visintini, and K.Olaf Niemann

11:10 – 11:30   HYPERSPECTRAL DATASETS OF BOREAL FOREST UNDERSTORY VEGETATION IN
FINLAND
Miina Rautiainen, Janne Heiskanen, Matti Mõttus, Jouni Peltoniemi

11:30 – 11:50   EXTRACTION OF LAMBERT PARAMETER FROM LEAF SCALE HYPERSPECTRAL
IMAGES
Kuniaki Uto and Yukio Kosugi

11:50 – 12:10   BIODIVERSITY ASSESSMENT USING HIERARCHICAL CLUSTERING OVER
HYPERSPECTRAL IMAGES
Ollantay Medina, Vidya Manian and J. Danilo Chinea

12:10 – 13:30 Lunch break

13:30 – 15:10 Session tue-o-2-a
Geology, Mineralogy and Mining Industry (1)
Session Chairs: Zhizhong Li, China Geological Survey
                                  Shengbo Chen, Jilin University, China

13:30 – 13:50 SPECTRAL ENHANCEMENT OF SEBASS HYPERSPECTRAL DATA AND ITS
APPLICATION IN MAPPING OF ULTRAMAFIC ROCKS
J. Feng, B. Rivard, D.M. Rogge, and B. Grant

13:50 – 14:10 GOING STRAIGHT: PREPROCESSING HYPERSPECTRAL CORE LOG IMAGES
NE Pendock, PD Harris, PL Linton, M Sears

14:10 – 14:30 CHARACTERISING SURFACE MINERALOGY OF AN OPEN PIT MINING AREA USING
HYPERION IMAGERY
Raval S., Jia X., Merton R. M. and Laurence D.

14:30 – 14:50 APPLICATION OF AIRBORNE HYPERSPECTRAL REMOTE SENSING TECHNIQUE TO
GEOLOGICAL PROSPECTING-TAKEN THE LIUYUAN AREA IN GANSU PROVINCE AS
AN EXAMPLE
Liu Dechang, Sun Yu, Zhao Yingjun, Tian Feng, Yan Bokun

14:50 – 15:10 MINE TAILINGS WATER MAPPING USING CHRIS PROBA IMAGERY
Raval S., Merton R. N. and Laurence D.

Session tue-o-2-b
Anomaly and Target Detection
Session Chairs: Robert Sundberg, Spectral Sciences, Inc. , USA
                                  Bing Zhang, CEODE, Chinese Academy of Sciences

13:30 – 13:50 ROBUST RX ANOMALY DETECTOR WITHOUT COVARIANCE MATRIX ESTIMATION
Santiago Velasco-Forero, Jesus Angulo

13:50 – 14:10 IMPROVEMENT OF BACKGROUND CHARACTERIZATION FOR HYPERSPECTRAL
TARGET DETECTION
Ben Ma, Qian Du

14:10 – 14:30 TARGETED CHANGE DETECTION FOR STACKED MULTI-TEMPORAL
HYPERSPECTRAL IMAGE
Chen Wu, Liangpei Zhang, Bo Du

14:30 – 14:50 A LOCAL SUBSPACE BASED NONLINEAR TARGET DETECTOR
Ting Wang, Bo Du, Liangpei Zhang

14:50 – 15:10 PRELIMINARY RESULTS TO DEFINE AN ACTIVE MULTISPECTRAL IMAGER FOR
GUNSHOT RESIDUES PATTERNS VISUALIZATION
Ph. Déliot, B. Corcelle, V. Achard, Th. Dartigalongue, A. Desmarais, C. Giacometti

15:10 – 15:40 Coffee break

15:40 – 17:40 Session tue-o-3-a
Unmixing (1)
Session Chairs: Mario Parente, University of Massachusetts, USA
                                  Antonio Plaza, University of Extremadura, Spain

15:40 – 16:00 DICTIONARY PRUNING IN SPARSE UNMIXING OF HYPERSPECTRAL DATA
Marian-Daniel Iordache, Jose M. Bioucas-Dias and Antonio Plaza

16:00 – 16:20 MINIMUM VARIANCE BLOCK-BASED NONNEGATIVE MATRIX FACTORIZATION
ALGORITHM FOR HYPERSPECTRAL UNMIXING
Sen Jia, Jinquan Liang, Lin Deng and Yuntao Qian

16:20 – 16:40 NONLINEAR UNMIXING OF HYPERSPECTRAL IMAGES BASED ON MULTI-KERNEL
LEARNING
Jie Chen, C´edric Richard, Paul Honeine

16:40 – 17:00 DETECTING NONLINEAR MIXTURES IN HYPERSPECTRAL IMAGES
Yoann Altmann, Nicolas Dobigeon and Jean-Yves Tourneret

17:00 – 17:20 A SPARSITY PROMOTING BILINEAR UNMIXING MODEL
Paul Gader, Dmitri Dranishnikov, Alina Zare, Jocelyn Chanussot

17:20 – 17:40 EXPLORING SUPPORT VECTOR MACHINE IN SPECTRAL UNMIXING
Liguo Wang, Danfeng Liu, Liang Zhao

Session tue-o-3-b
Oceans and Water Bodies
Session Chairs: Bin Luo, State Key Lab of Information Enigneering in Surveying,
Mapping, and Remote Sensing, Wuhan University, China
Michael Sears, University of the Witwatersrand, South Africa

15:40 – 16:00 STUDY ON LEVEL-1 REQUIREMENTS OF HYPERSPECTRAL REMOTE SENSOR FOR
INLAND WATERS
Shen Qian, Zhang Bing, Li Junsheng, Wu Yanhong, Ni Li, Qiao Wei

16:00 – 16:20 FEATURES OF TURBID WATERS FROM HYPERSPECTRAL IMAGER FOR THE
COASTAL OCEAN (HICO): PRELIMINARY RESULTS AT THE YELLOW RIVER DELTA
AND THE BOHAI SEA
Qianguo Xing, Mingjing Lou, Dingfeng Yu, Ruolin Meng, Ping Shi, Federica Braga,
Luca Zaggia, Luigi Tosi

16:20 – 16:40 BATHYMETRIC ESTIMATION IN THE LAGOON OF NEW CALEDONIA, USING SEVERAL
MERIS IMAGES
Audrey MINGHELLI-ROMAN, Cécile DUPOUY

16:40 – 17:00 INFLUENCE OF SOLAR AND SENSOR ANGLES ON CHLOROPHYLL ESTIMATION FOR
GEOSTATIONARY OCEAN COLOR IMAGER
Manchun Lei, Audrey Minghelli-Roman, Sandrine Mathieu, Pierre Gouton

17:00 – 17:20 RESOLUTION IMPROVEMENT BY MERGING MERIS-ETM IMAGES USING BANDS
OVERLAPPING INFORMATION AND PAN SHARPENING APPROACH
Diogone Sylla, Audrey Minghelli-Roman, Antoine Mangin, Odile Fanton d'Andon

**19:30 – 21:00 Meeting of the GRSS Standardized Algorithm, Data, and Evaluation (SADE) Working
group** in **Tongji Days Hotel**. The group will be focused on precisely defining specific
problems in HISP and welcome all who would like to contribute.

08:30 – 09:30 **Plenary 2**
Planetary Hyperspectral Imagery, from remote characterizations down to microscopic in situ**analysis**
Dr Jean-Pierre Bibring, Professor of Physics, University of Paris, Orsay, France, and Astrophysicist at IAS, Institut d'Astrophysique Spatiale, Orsay
Session Chair: Xiaohua Tong, Tongji University, China

09:30 – 11:10 **Session wed-o-1-a**
Unmixing (2)
Session Chairs: Sen Jia, Shenzhen University, China
Mario Parente, University of Massachusetts, USA

Session wed-o-1-b
Extraterrestrial Sensing / Change Detection
Session Chairs: Lori Bruce, Mississippi State University, USA
Liguo Wang, Harbin Engineering University, China

11:10 – 11:40 Coffee break

11:40 – 13:00 **Session wed-p**
Poster
Session Chairs: Wenfei Luo, South China Normal University
Naoto Yokoya, The University of Tokyo, Japan

13:00 – 14:00 Lunch break

14:00 – 15:40 **Session wed-o-2-a**
Classification (2)
Session Chairs: Jean-Yves Tourneret, University of Toulouse, France
Mingmin Chi, Fudan University, China

Session wed-o-2-b
Advanced Models and Concepts in HS Data Processing
Session Chairs: Huanfeng Shen, Wuhan University, China
Wing-Kin Ma, The Chinese University of Hong Kong, Hong Kong

15:40 – 16:10 Coffee break

16:10 – 17:30 **Session wed-o-3-a**
Infrared and Thermal Sensing
Session Chairs: Nasser Nasrabadi, US Army Research Lab, USA
Bo Du, Wuhan University, China

Session wed-o-3-b
Calibration, Atmospheric Correction and Restoration
Session Chairs: Lianru Gao, CEODE, Chinese Academy of Sciences
Paul Gader, University of Florida, USA

08:30 – 09:30   Plenary 2
Planetary Hyperspectral Imagery, from remote characterizations down to microscopic in situanalysis
Dr Jean-Pierre Bibring, Professor of Physics, University of Paris, Orsay, France, and Astrophysicist at IAS, Institut d'Astrophysique Spatiale, Orsay
Session Chair: Xiaohua Tong, Tongji University, China

09:30 – 11:10   Session wed-o-1-a
Unmixing (2)
Session Chairs: Sen Jia, Shenzhen University, China
                       Mario Parente, University of Massachusetts, USA

09:30 – 09:50   PRIMAL DUAL INTERIOR POINT OPTIMIZATION FOR PENALIZED LEAST SQUARES ESTIMATION OF ABUNDANCE MAPS IN HYPERSPECTRAL IMAGING
Saïd Moussaoui, Emilie Chouzenoux, Jérôme Idier

09:50 – 10:10   BOOTSTRAPPING FOR PIECE-WISE CONVEX ENDMEMBER DISTRIBUTION DETECTION
Alina Zare, Paul Gadery, Tim Allgire, Dmitri Dranishnikov,y Ryan Closey

10:10 – 10:30   ON THE USE OF OVERCOMPLETE DICTIONARIES FOR SPECTRAL UNMIXING
Jakub Bieniarz, Rupert Muller, Xiaoxiang Zhu, Peter Reinartz

10:30 – 10:50   A FAST GEOMETRIC ALGORITHM FOR SOLVING THE INVERSION PROBLEM IN SPECTRAL UNMIXING
Rob Heylen, Paul Scheunders

10:50 – 11:10   UNMIXING ANALYSIS BASED ON MULTISCALE SEGMENTATION
Maria C. Torres-Madronero, and Miguel Vélez-Reyes, Senior Member

Session wed-o-1-b
Extraterrestrial Sensing / Change Detection
Session Chairs: Lori Bruce, Mississippi State University, USA
                       Liguo Wang, Harbin Engineering University, China

09:30 – 09:50   SELECTION OF DIFFERENT EXTRATERRESTRIAL SOLAR SPECTRAL IRRADIANCE DATASETS AND ITS EFFECTS ON MEAN SOLAR EXOATMOSPHERIC IRRADIANCE
Hu Shunshi, Zhang Lifu

09:50 – 10:10   SPATIAL-SPECTRAL UNMIXING OF HYPERSPECTRAL DATA FOR DETECTION AND ANALYSIS OF ASTROPHYSICAL SOURCESWITH THE MUSE INSTRUMENT
Yu-Shiuan Shen, Tsung-Han Chan, Sebastien Bourguignon and Chong-Yung Chi

10:10 – 10:30   HYPERSPECTRAL CHANGE DETECTION BY DIRECTION PURSUIT
G. Brisebarre, M.Guillaume, A. Huck and L. Denise

10:30 – 10:50   A NEW METHOD FOR CHANGE ANALYSIS OF MULTI-TEMPORAL HYPERSPECTRAL IMAGES
Qian Du

10:50 – 11:10   UNSUPERVISED HIERARCHICAL SPECTRAL ANALYSIS FOR CHANGE DETECTION IN HYPERSPECTRAL IMAGES
Sicong Liu Lorenzo Bruzzone Francesca Bovolo Peijun Du

11:10 – 11:40   Coffee break

11:40 – 13:00   Session wed-p
Poster
Session Chairs: Wenfei Luo, South China Normal University
                       Naoto Yokoya, The University of Tokyo, Japan

01   VERTEX COMPONENT ANALYSIS GPU-BASED IMPLEMENTATION FOR
       HYPERSPECTRAL UNMIXING
       Jose M. Rodrıguez Alves, Jose M. P. Nascimento, Antonio Plaza, Sergio Sanchez, Jose M.
       Bioucas-Dias, and Vıtor Silva

02   HIGH-LEVEL FPGA-BASED IMPLEMENTATION OF A HYPERSPECTRAL ENDMEMBER
       EXTRACTION ALGORITHM
       Sebastian Lopez, Gustavo M. Callico, Anabella Medina, Jose F. Lopez and Roberto Sarmiento

03   GPU IMPLEMENTATION OF A LOSSY COMPRESSION ALGORITHM FOR HYPERSPECTRAL
       IMAGES
       Lucana Santos, Raffaele Vitulli, José Fco. López, Roberto Sarmiento

04   GPU-BASED ENSEMBLE EMPIRICAL MODE DECOMPOSITION APPROACH TO
       SPECTRUM DISCRIMINATION
       Yung-Ling Wang, Hsuan Ren, Min-Yu Huang, and Yang-Lang Chang

05   GPU IMPLEMENTATION OF ANT COLONY OPTIMIZATION ALGORITHM
       FOR ENDMEMBER EXTRACTION FROM HYPERSPECTRAL IMAGE
       Jianwei Gao, Lianru Gao, Xu Sun, Yuanfeng Wu, Bing Zhang

06   UTILIZING HYPERSPECTRAL IMAGERY TO IDENTIFY HIGHLY-REACTIVE VOLATILE
       ORGANIC COMPOUNDS IN COMBUSTION FLARE EMISSIONS
       R. Taylor and R. Panfili

07   VERTICAL MOVEMENT OF THE METAL ELEMENTS FROM ROCK TO LEAF AND THEIR PLANT
       STRESS SPECTRAL RESPONSE IN METAL MINES
       Zhou Chao,Chen Sheng-bo,Yang Qian,Liu Yan-li,Zhao Liang

08   AERIAL INVENTORY OF FRAGMENTED FOREST USING AIRBORNE HYPERSPECTRAL
       IMAGING
       Alias M.S., Wan Ghazali W.A., Puteri Arlydia A.

09   THE STUDY OF CORRELATION ANALYSIS BETWEEN THE SALINE SOIL HYPERSPECTRAL
       REFLECTANCE AND THE SURFACE SOIL CONDUCTIVITY AT THE WEIGAN-KUQA RIVERS
       DELTA OASIS
       DING Jian-li, TASHPOLAT. Tiyip YAO Yuan ZHAO Zhenliang ZHANG Fei

10   THE THEORY AND APPLICATION OF THE SPECTRALOGY OF SOIL REMOTE SENSING
       Zhou Ping，Guan Xiao，Wang Huarui

11   SVM-BASED FEATURE EXTRACTION AND CLASSIFICATION OF AFLATOXIN CONTAMINATED
       CORN USING FLUORESCENCE HYPERSPECTRAL DATA
       Haibo Yao, Zuzana Hruska, Russell Kincaid, Robert L. Brown, Deepak Bhatnagar, and Thomas E.
       Cleveland

12   A COMPARISON OF HYPERSPECTRAL DATA AND WORLDVIEW-2 IMAGES TO DETECT
       IMPERVIOUS SURFACE
       Ebrahim Taherzadeh, Helmi Z.M. Shafri, Shattri Mansor and Ravshan Ashurov

13   CORRELATION BETWEEN THE VARIATIONS OF CLAY CONTENT IN SOILS AND
      SEDIMENTS AND THE SPECTRAL BEHAVIOR OF SUPERJACENT VEGETATION USING
      SPECTIR HYPERSPECTRAL IMAGES
      Cibele Hummel do Amaral, Teodoro Isnard Ribeiro de Almeida, Carlos Roberto de Souza Filho,
      Moreno Botelho, Marcos Nopper Alves, Natasha Costa Penatti

14   SPECTRAL BRDF OF COMMON URBAN MATERIALS
      K.L. Seow, M. Doya, X. Briottet, R. Ceolato, N. Riviere, S.K. Pang

15   EFFECTS OF SHOOT-LEVEL STRUCTURE ON NARROWBAND VEGETATION INDICES
      FOR SCOTS PINE
      Matti Mõttus, Miina Rautiainen

16   SPECTRAL MIXTURE ANALYSIS OF HYPERSPECTRAL DATA USING GENETIC
      ALGORITHM AND SPECTRAL ANGLE CONSTRAINT (GA-SAC)
      Subir Chowdhury, Jinkai Zhang, Karl Staenz, and Derek Peddle

13:00 – 14:00 Lunch break

14:00 – 15:40 Session wed-o-2-a
**   Classification (2)**
                 Session Chairs: Jean-Yves Tourneret, University of Toulouse, France
                                        Mingmin Chi, Fudan University, China

14:00 – 14:20 AN INPROVED BINARY ENCODING ALGORITHM FOR CLASSIFICATION OF
               HYPERSPECTRAL IMAGES
               Huan XIE, Xiaohua TONG

14:20 – 14:40 HYPERSPECTRAL CLASSIFICATION USING SELECTED CONTOURLET SUBBANDS
               Zhiling Long, Qian Du, and Nicolas H. Younan

14:40 – 15:00 SEMI-SUPERVISED DISCRIMINATIVE RANDOM FIELD
               FOR HYPERSPECTRAL IMAGE CLASSIFICATION
               Jun Li, Jose M. Bioucas-Dias, and Antonio Plaza

15:00 – 15:20 A NEW SEMI-SUPERVISED APPROACH FOR HYPERSPECTRAL IMAGE
               CLASSIFICATION WITH DIFFERENT ACTIVE LEARNING STRATEGIES
               Inmaculada D´opido, Jun Li, Antonio Plaza and Jose M. Bioucas-Dias

15:20 – 15:40 UNSUPERVISED MULTISPECTRAL IMAGE CLASSIFICATION
               Shih-Yu Chen, Chinsu Lin, Yen-Chieh Ouyang, Chein-I Chang

               Session wed-o-2-b
               Advanced Models and Concepts in HS Data Processing
               Session Chairs: Huanfeng Shen, Wuhan University, China
                                      Wing-Kin Ma, The Chinese University of Hong Kong, Hong Kong

14:00 – 14:20 A METHOD FOR OBJECT IDENTIFICATION IN MULTISPECTRAL IMAGE BASED ON
               TENSOR APPROACH
               Lefei Zhang, Xin Huang and Liangpei Zhang

14:20 - 14:40 ROBUST DETECTION USING M-ESTIMATORS FOR HYPERSPECTRAL IMAGING
               J. Frontera-Pons, M. Mahot, J.P. Ovarlez, F. Pascal, J. Chanussot

14:40 – 15:00 LATTICE AUTO-ASSOCIATIVE MEMORIES INDUCED SUPERVISED ORDERING
               DEFINING A MULTIVARIATE MORPHOLOGY ON HYPERSPECTRAL DATA
               Miguel A. Veganzones, Manuel Graña

15:00 – 15:20 SUPERVISED MORPHOLOGICAL TARGET DETECTION
FROM POLARIMETRIC STOKES VECTORS IMAGES
Joana Frontera-Pons, Jesus Angulo

15:20 – 15:40 HYPERSPECTRAL AND MULTISPECTRAL DATA FUSION BASED ON NONLINEAR
UNMIXING
Naoto Yokoya, Jocelyn Chanussot, and Akira Iwasaki

15:40 – 16:10 Coffee break

16:10 – 17:30 Session wed-o-3-a
Infrared and Thermal Sensing
Session Chairs: Nasser Nasrabadi, US Army Research Lab, USA
Bo Du, Wuhan University, China

16:10 – 16:30 PHYSIC BASED AGGREGATION MODEL FOR THE UNMIXING OF TEMPERATURE AND
OPTICAL PROPERTIES IN THE INFRARED DOMAIN
Manuel Cubero-Castan, Xavier Briottet , Michal Shimoni , Veronique Achard, Jocelyn
Chanussot

16:30 – 16:50 PERFORMANCE ANALYSIS OF UNSUPERVISED UNMIXING MODELS FOR THERMAL
HYPERSPECTRAL
Michal Shimoni, Xavier Briottet, Manuel Cubero-Castan, Christiaan Perneel, Véronique
Achard and Jocelyn Chanussot

16:50 – 17:10 COMPARISON OF THE LAND SURFACE TEMPERATURE AND EMISSIVITY
SEPARATION METHOD FOR HYPERSPECTRAL THERMAL INFRARED
MEASUR EMENT
Ning Wang, Xinhong Wang, Lingling Ma, Yonggang Qian, Lingli Tang and Chuanrong Li

17:10 – 17:30 ANALYSIS OF SURFACE RADIANCE COMPOSITION FOR ABSORPTION BANDS
IN MIDDLE-INFRARED REGIONS
Yao Liu, Wenjuan Zhang, Bing Zhang

Session wed-o-3-b
Calibration, Atmospheric Correction and Restoration
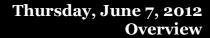Session Chairs: Lianru Gao, CEODE, Chinese Academy of Sciences
Paul Gader, University of Florida, USA

16:10 – 16:30 QUICK ATMOSPHERIC CORRECTION (QUAC) CODE FOR VNIR-SWIR SPECTRAL
IMAGERY: ALGORITHM DETAILS
Lawrence S. Bernstein, Steven M. Adler-Golden, Xuemin Jin, Brian Gregor and Robert L.
Sundberg

16:30 – 16:50 ATMOSPHERIC CORRECTION OF A SEASONAL TIME SERIES OF HYPERION EO-1
IMAGES AND RED EDGE INFLECTION POINT CALCULATION
Veli-Heikki Vesanto, Matti Mõttus, Janne Heiskanen, Miina Rautiainen, Titta Majasalmi

16:50 – 17:10 A PRELIMINARY STUDY ON GOSAT L1B DATA AND CO2 ABSORPTION SPECTRAL
SIMULATION USING LINE-BY-LINE RADIATIVE MODEL
Shanshan Hou, Liping Lei, Zhaocheng Zeng, Xianhua Guan, Fei Ru

17:10 – 17:40 AN EM-BASED SPATIAL-SPECTRAL RESTORATION APPROACH FOR
HYPERSPECTRAL IMAGES
Yifan Zhang and Mingyi He

08:30 – 09:30 **Plenary 3**
Monitoring Canopy Chemistry with Next Generation Imaging Spectrometer from Satellites
Dr Susan L. Ustin, Dept of Land, Air and Water Resources, Uni. Of California, Davis, USA
Session Chair: Peijun Du, Nanjing University, China

09:30 – 11:10 **Session thu-o-1-a**
Vegetation (2)
Session Chairs: Kun Tan, China University of Mining and Technology
                                      Miina Rautiainen, University of Helsinki, Finland

Session thu-o-1-b
Noise Reduction
Session Chairs: Paolo Gamba, University of Pavia, Italy
                                      Yanfei Zhong, State Key Lab of Information Enigneering in
                                      Surveying, Mapping, and Remote Sensing, Wuhan University, China

11:10 – 11:40 Coffee break

11:40 – 13:00 **Session thu-p**
Poster
Session chairs: Hongjun Su, Hohai University, China
                                      Alina Zare, University of Missouri, USA

13:00 – 14:00 Lunch break
14:00 – 15:40 **Session thu-o-2-a**
Classification (3)
Session Chairs: Heesung Kwon, U.S. Army Research Laboratory, USA
                                      Mingyi He, Northwestern Polytechnical University, China

Session thu-o-2-b
Geology, Mineralogy and Mining Industry (2)
Session Chairs: Daming Wang, China Geological Survey
                                      Lifu Zhang, Institute of Remote Sensing Applications, Chinese
                                      Academy of Sciences

15:40 – 16:10 Coffee break

16:10 – 18:10 **Session thu-o-3-a**
Band Selection, Feature Extraction
Session Chairs: Xiuping Jia, UNSW, Canberra, Australia
                                      Bin Wang, Fudan University, China

Session thu-o-3-b
Unmixing (3)
Session Chairs: Yuntao Qian, Zhejiang University, China
                                      Michal Shimoni, SIC-RMA, Brussels, Belgium

08:30 – 09:30 Plenary 3
TBA
Dr Susan L. Ustin, Dept of Land, Air and Water Resources, Uni. Of California, Davis, USA
Session Chair: Peijun Du, Nanjing University, China

09:30 – 11:10 Session thu-o-1-a
Vegetation (2)
Session Chairs: Kun Tan, China University of Mining and Technology
                         Miina Rautiainen, University of Helsinki, Finland

09:30 – 09:50 SPATIAL PROBABILITY MEMBERSHIP VALUE BASED ENSEMBLE: AN IMPROVED
               TOOL FOR VEGETATION MAPPING
               Karoly Livius Bakos, Paolo Gamba

09:50 – 10:10 SHAPE-BASED UNMIXING FOR VEGETATION MAPPING
               L. Tits, B. Somers, W. De Keersmaecker, G.P. Asner J. Farifteh, P. Coppin

10:10 – 10:30 CONSIDERING THE IMPLICATIONS OF SPECIES ON PIGMENT ESTIMATION FROM
               LEAF SPECTROSCOPY
               Geoffrey S. Quinn, Fabio Visintini and K.Olaf Niemann

10:30 – 10:50 CORRELATION BETWEEN SPECTRAL VEGETATION INDICES AND PARAMETERS OF
               BIOCHEMICAL OF TOMATOES UNDER YELLOW LEAF CURL VIRUS STRESS
               Xin Yu, Jun Li, Jinheng Zhang Zhende Chen, Yongliang Lv

10:50 – 11:10 INVERSION OF THE PROFLAIR LEAF-CANOPY REFLECTANCE MODEL FOR
               RETRIEVAL OF FOREST CANOPY PARAMETERS
               H. Peter White, Khalid Omari, Karl Staenz, Douglas J. King

               Session thu-o-1-b
               Noise Reduction
               Session Chairs: Paolo Gamba, University of Pavia, Italy
                                        Yanfei Zhong, State Key Lab of Information Enigneering in
                                        Surveying, Mapping, and Remote Sensing, Wuhan University, China

09:30 – 09:50 RESTORING AQUA MODIS BAND 6 BY OTHER SPECTRAL BANDS USING
               COMPRESSED SENSING THEORY
               Xinghua Li Huanfeng Shen Chao Zeng Penghai Wu

09:50 – 10:10 A COMPARATIVE STUDY ON NOISE ESTIMATION FOR HYPERSPECTRAL IMAGERY
               Lianru Gao, Qian Du, Wei Yang, Bing Zhang

10:10 – 10:30 THE EFFECT OF SPECTRALLY CORRELATED NOISE ON NOISE ESTIMATION
               METHODS FOR HYPERSPECTRAL IMAGES
               K. Cawse-Nicholson, A. Robin, M. Sears

10:30 – 10:50 MIXED POISSON-GAUSSIAN NOISE MODEL BASED SPARSE DENOISING FOR
               HYPERSPECTRAL IMAGERY
               Minchao Ye and Yuntao Qian

10:50 – 11:10 HYPSPECTRAL IMAGE DENOISING WITH A MULTI-VIEW FUSION STRATEGY
               Qiangqiang Yuan, Huanfeng Shen ,Liangpei Zhang, Xia Lan

11:10 – 11:40 Coffee break

11:40 – 13:00   Session thu-p
Poster
Session chairs: Hongjun Su, Hohai University, China
                         Alina Zare, University of Missouri, USA

01   HYPERSPECTRAL IMAGERY VISUALIZATION USING BAND SELECTION
      Hongjun Su, Qian Du, Peijun Du

02   A HYPERSPECTRAL IMAGE FUSION ALGORITHM BASED ON COMPRESSIVE SENSING
      Anzhu Yu , Ting Jiang , Wei Chen , Xiong Tan

03   SUBPIXEL MAPPING OF HYPERSPECTRAL DATA USING HIGH RESOLUTION COLOR IMAGES
      Z. Mahmood, G. Thoonen, M.A. Akhter, and P. Scheunders

04   IMPROVED L-ISOMAP FOR CLASSIFICATION OF HYPERSPECTRAL IMAGE VIA VECTOR
      QUANTIZATION
      Weiwei Sun   Chun Liu   Beiqi Shi   Weiyue Li

05   FURTHER IMPROVEMENTS OF PARALLEL N-FINDR ALGORITHM USING NVIDIA GPUS
      Wenfei Luo

06   NOISE-ADJUSTED SUBSPACE LINEAR DISCRIMINANT ANALYSIS FOR
      HYPERSPECTRAL-IMAGE CLASSIFICATION
      Wei Li , Saurabh Prasad , James E. Fowler , Qian Du

07   SPARSE REPRESENTATION FOR HYPERSPECTRAL IMAGE TARGET DETECTION
      Yongshuai Yan, Binbin He

08   A SPLIT BREGMAN METHOD FOR LINEAR SPECTRAL UNMIXING
      Jianjun Liu, Zebin Wu, Zhihui Wei, Le Sun

09   SPARSE REPRESENTATION BASED HYPERSPECTRAL IMAGERY CLASSIFICATION VIA
      EXPANDED DICTIONARY
      Lin He, Weitong Ruan, Yuanqing Li

10   AN ENDMEMBER EXTRACTION FRAMEWORK BASED ON ABUNDANCE CONSTRAINT
      Mingming Xu, Liangpei Zhang, Bo Du and Liqun Liu

11   NEW AUTOMATED METHOD FOR ESTIMATING THE NUMBER OF ENDMEMBERS IN
      HYPERSPECTRAL IMAGES
      C. Andreou, V. Karathanassi

12   BAND SELECTION-BASED GABOR WAVELET FEATURE EXTRACTION FOR
      HYPERSPECTRAL IMAGERY CLASSIFICATION
      Sen Jia, Linlin Shen and Lin Deng

13   ABUNDANCE ESTIMATION FOR HYPERSPECRTRAL UNMIXING: A METHOD
      BASED ON DISTANCE GEOMETRY
      Hanye Pu, Wei Xia, Bin Wang, and Liming Zhang

14   HYPERSPECTRAL DATA COMPRESSION USING SPARSE REPRESENTATION
      Chengfu Huo, Rong Zhang, Dong Yin, Qian Wu, Dawei Xu

15   SPECTRAL ANGLE SENSITIVE FOREST: A SOLUTION FOR FAST HYPERSPECTRAL
      MATCHING
      Yuan Zhou, Shenghui Fang, Xinwei Fang

13:00 – 14:00   **Lunch break**

14:00 – 15:40   **Session thu-o-2-a**
Classification (3)
Session Chairs: Heesung Kwon, U.S. Army Research Laboratory, USA
                                  Mingyi He, Northwestern Polytechnical University, China

14:00 – 14:20   WEIGHTED FEATURES FOR CLUSTER SPACE CLASSIFICATON OF HYPERSPECTRAL
IMAGES
Theam Foo Ng, Xiuping Jia, Tuan D. Pham

14:20 – 14:40   OPTIMAL SPARSE KERNEL LEARNING IN THE EMPIRICAL KERNEL FEATURE SPACE
FOR HYPERSPECTRAL CLASSIFICATION
Prudhvi Gurram, Heesung Kwon

14:40 – 15:00   SEMI-SUPERVISED DIMENSIONALITY REDUCTION FOR HYPERSPECTRAL REMOTE
SENSING IMAGE CLASSIFICATION
Junshi Xia, Jocelyn Chanussot , Peijun Du, Xiyan He

15:00 – 15:20   HYPERSPECTRAL IMAGE CLASSIFICATION USING BAND SELECTION AND
MORPHOLOGICAL PROFILE
Kun Tan, Erzhu Li, Qian Du, Peijun Du

15:20 – 15:40   WHEN SPECTRAL DERIVATIVE FEATURESWORKING FOR THE SUPERVISED
CLASSIFICATION OF REMOTE SENSING DATA: AN EXPERIMENTAL EVALUATION
Jiangfeng Bao, Mingmin Chi, Jon Atli Benediktsson

Session thu-o-2-b
Geology, Mineralogy and Mining Industry (2)
Session Chairs: Daming Wang, China Geological Survey
                                  Lifu Zhang, Institute of Remote Sensing Applications, Chinese
                                  Academy of Sciences

14:00 – 14:20   A REVIEW ON THE GEOLOGICAL APPLICATIONS OF HYPERSPECTRAL
REMOTE SENSING TECHNOLOGY
Li Zhizhong, Yang Rihong, Dang Fuxing, Du Peijun, Zhang Xianfeng, Tan Bingxiang,
Zhao Huijie, Su Hongjun

14:20 – 14:40   THE SPECTRAL CRUST PROJECT—RESEARCH ON NEW MINERAL EXPLORATION
TECHNOLOGY
Jinnian Wang, Lifu Zhang, Qingxi Tong, Xuejian Sun

14:40 – 15:00   SYSTEM COMPOSITION AND MULTIDIMENSIONAL ANALYSIS TOOLS OF
MULTIDIMENSIONAL HYPERSPECTRAL DATABASE FOR ROCK AND MINERAL
Lifu Zhang, Huanhu Qin, Kai Liu, Taixia Wu

15:00 – 15:20   APPLICATION OF AIRBORNE HYPER-SPECTRAL REMOTE SENSING TECHNIQUE TO
URANIUM PROSPECTING: A CASE STUDY OF BAIYANGHE AREA, XINJIANG
Ye Fawang, Zhang Jielin, Zhang Chuan, Fang Maolong

15:20 – 15:40   A NOVEL METHOD FOR AUTOMATIC MINERALS IDENTIFICATION AND THEIR
ABUNDANCE ESTIMATION FOR MATERIAL TYPE DISCRIMINATION USING
HYPERSPECTRAL DATA
Keshav Dev Singh, Desikan Ramakrishnan and Lalu Mansinha

15:40 – 16:10 Coffee break

16:10 – 18:10 Session thu-o-3-a
Band Selection, Feature Extraction
Session Chairs: Xiuping Jia, UNSW, Canberra, Australia
                                    Bin Wang, Fudan University, China

16:10 – 16:30 CORRELATION MATRIX FEATURE EXTRACTION BASED ON SPECTRAL
CLUSTERING FOR HYPERSPECTRAL IMAGE SEGMENTATION
Bor-Chen Kuo, Wei-Ming Chang , Cheng-Hsuan Li , and Chih-Cheng Hung

16:30 – 16:50 OUTLIER-ROBUST DIMENSION REDUCTION AND ITS IMPACT ON HYPERSPECTRAL
ENDMEMBER EXTRACTION
Hao-En Huang, Tsung-Han Chan, ArulMurugan Ambikapathi, Wing-Kin Ma, Chong-Yung Chi

16:50 – 17:10 GLOBALLY MAXIMIZING, LOCALLY MINIMIZING: REGULARIZED NONNEGATIVE
MATRIX FACTORIZATION FOR HYPERSPECTRAL DATA FEATURE EXTRACTION
Mingyi He , Feng Wei and Xiuping Jia

17:10 – 17:30 A SEMISUPERVISED FEATURE METRIC BASED BAND SELECTION METHOD FOR
HYPERSPECTRAL IMAGE CLASSIFICATION
Chen Yang Sicong Liu Lorenzo Bruzzone Renchu Guan Peijun Du

17:30 – 17:50 A NEW NETWORK BASED FEATURE-SELECTION APPROACH FOR
HYPERSPCETRAL ANALYSIS
Wei Xia, Hanye Pu, Zhao Dong, Bin Wang, and Liming Zhang

Session thu-o-3-b
Unmixing (3)
Session Chairs: Yuntao Qian, Zhejiang University, China
                                    Michal Shimoni, SIC-RMA, Brussels, Belgium

16:10 – 16:30 ITERATIVE PIXEL PURITY INDEX
Chein-I Chang, Chao-cheng Wu

16:30 – 16:50 NON-LOCAL SPARSE SPECTRAL UNMIXING FOR REMOTE SENSING IMAGERY
Ruyi Feng, Yanfei Zhong and Liangpei Zhang

16:50 – 17:10 NONNEGATIVE MATRIX FACTORIZATION WITH COLLABORATIVITY FOR
HYPERSPECTRAL UNMIXING
Jun Li, Jose M. Bioucas-Dias, and Antonio Plaza

17:10 – 17:30 AN ENDMEMBER DISSIMILARITY BASED NON-NEGATIVE MATRIX FACTORIZATION
METHOD FOR HYPERSPECTRAL UNMIXING
Nan Wang, Liangpei Zhang, Bo Du

17:30 – 17:50 A NEW ENDMEMBER EXTRACTION ALGORITHM BY MAXIMUM ASC FRACTION
Luyan Ji, Xiurui Geng, Yongchao Zhao

17:50 – 18:10 ANALYSIS OF ENDMEMBER EXTRACTION PROCESS IN GEOLOGICAL SITE
Yuki Itoh and Akira Iwasaki