



w h i s p e r s

**2nd Workshop on
Hyperspectral Image and Signal Processing :
Evolution in Remote Sensing**

14 - 16 June 2010, Reykjavik, Iceland

Workshop Program





w h i s p e r s

WHISPERS at a glance

Sunday, June 13, 2010

18:00 - 20:00 Icebreaker – [University Square](#)

Monday, June 14, 2010

07:30 - 10:00 Arrival and registration

10:00 - 10:30 Opening of the workshop – [Room HT 102](#)

10:30 - 11:30 Plenary 1: Continuum fusion: a new theory of inference [Room HT 102](#)

11:30 - 13:10

mon-o-1-a Hyperspectral Data Processing for Defense and Security (1) [Room HT 102](#)

mon-o-1-b Coastal and littoral areas, oceanic monitoring [Room HT 104](#)

13:10 - 14:10 Lunch break

14:10 - 15:50

mon-o-2-a Spatial-Spectral Hyperspectral Image Analysis (1) [Room HT 102](#)

mon-o-2-b Next Steps in Environmental Monitoring [Room HT 104](#)

15:50 - 16:20 Coffee break

16:20 - 18:20

mon-o-3-a Classification [Room HT 102](#)

mon-o-3-b Astrophysics and planetary exploration (1) [Room HT 104](#)

Tuesday, June 15, 2010

08:30 - 09:30 Plenary 2: Feature mining from a HS data cube for information mapping: 3D and beyond [Room HT 102](#)

09:30 - 11:10

tue-o-1-a Hyperspectral Data Processing for Defense and Security (2) [Room HT 102](#)

tue-o-1-b Machine Learning for Analysis of Hyperspectral Data (1) [Room HT 104](#)

11:10 - 11:40 Coffee break

11:40 - 13:00

tue-p-a Applications in biomedical imagery, chemistry and mineralogy

tue-p-b Monitoring of the vegetation and spectral invariants

tue-p-c Models, calibration and compression

13:00 - 14:00 Lunch break

14:00 - 15:40

tue-o-2-a Spatial-Spectral Hyperspectral Image Analysis (2) [Room HT 102](#)

tue-o-2-b Forward Modeling of Hyperspectral Data [Room HT 104](#)

15:40 - 16:10 Coffee break

16:10 - 17:50

tue-o-3-a Statistical vs. Geometric Unmixing Algorithms for Hyperspectral Data (1) [Room HT 102](#)

tue-o-3-b Monitoring of the vegetation [Room HT 104](#)

Wednesday, June 16, 2010

08:30 - 09:30 Plenary 3: Hyperspectral applications for forestry [Room HT 102](#)

09:30 - 11:10

wed-o-1-a Data and decision fusion [Room HT 102](#)

wed-o-1-b Machine Learning for Analysis of Hyperspectral Data (2) [Room HT 104](#)

11:10 - 11:40 Coffee break

11:40 - 13:00

wed-p-a Endmembers and unmixing

wed-p-b Astrophysics and planetary exploration (2)

wed-p-c Applications in hyperspectral imagery

13:00 - 14:00 Lunch break

14:00 - 15:40

wed-o-2-a Monitoring vegetation at multiple scales: canopy structure & spectr. invar. Parameters [Room HT 102](#)

wed-o-2-b Feature extraction, dimension reduction

15:40 - 16:10 Coffee break

16:10 - 17:50

wed-o-3-a Exploitation & Evaluation of Synthetic Hyperspectral Data. [Room HT 102](#)

wed-o-3-b Statistical vs. Geometric Unmixing Algorithms for Hyperspectral Data (2) [Room HT 104](#)

17:50 - 18:00 Concluding remarks, closing of the workshop [Room HT 102](#)



w h i s p e r s

Monday, June 14, 2010 Overview

07:30 - 10:00 Arrival and registration

10:00 - 10:30 Opening of the workshop

10:30 - 11:30 Plenary 1 - Continuum fusion: a new theory of inference

Dr A. Schaum, Naval Research Laboratory, USA

Session chair: Marco Diani, University of Pisa, Italy

11:30 - 13:10 Session mon-o-1-a

Hyperspectral Data Processing for Defense and Security (1)

Session Chairs: Dirk Borghys, Royal Military Academy, Belgium

Nasser Nasrabadi, US Army Research Lab, USA

Session mon-o-1-b

Coastal and littoral areas, oceanic monitoring

Session Chairs: Audrey Minghelli-Roman, Université du Sud Toulon-Var, France

Michael Sears, University of the Witwatersrand, South Africa

13:10 - 14:10 Lunch break

14:10 - 15:50 Session mon-o-2-a

Spatial-Spectral Hyperspectral Image Analysis (1)

Session Chairs: Paul Gader, University of Florida, USA

Alina Zare, University of Florida, USA

Session mon-o-2-b

Next Steps in Environmental Monitoring

Session Chairs: Andreas Müller, DLR, Germany

Anita Simic, University of Toronto, Canada

15:50 - 16:20 Coffee break

16:20 - 18:20 Session mon-o-3-a

Classification

Session Chairs: Paolo Gamba, University of Pavia, Italy

Anna Brook, Tel-Aviv University, Israel

Session mon-o-3-b

Astrophysics and planetary exploration (1)

Session Chairs: Sylvain Douté, Laboratoire de Planétologie de Grenoble, France

Yves Langevin, IAS Univ. Paris-Sud XI, France



w h i s p e r s

Monday, June 14, 2010

07:30 - 10:00 Arrival and registration

10:00 - 10:30 Opening of the workshop

10:30 - 11:30 Plenary 1 - Continuum fusion: a new theory of inference

Dr A. Schaum, Naval Research Laboratory, USA

Session chair: Marco Diani, University of Pisa, Italy

11:30 - 13:10 Session mon-o-1-a

Hyperspectral Data Processing for Defense and Security (1)

Session Chairs: Dirk Borghys, Royal Military Academy, Belgium

Nasser Nasrabadi, US Army Research Lab, USA

11:30 - 11:50 ON THE MODELING OF HYPERSPECTRAL IMAGING DATA WITH ELLIPTICALLY
CONTOURED DISTRIBUTIONS

Sidi Niu, Vinay Ingle, Dimitris Manolakis and Thomas Cooley

11:50 - 12:10 PASSIVE INFRARED HYPERSPECTRAL IMAGING FOR STANDOFF DETECTION
OF TETRYL EXPLOSIVE RESIDUE ON A STEEL SURFACE

Neal Gallagher, James Kelly and Thomas Blake

12:10 - 12:30 ATMOSPHERIC CORRECTION OF AIRBORNE INFRARED HYPERSPECTRAL
IMAGES USING NEURAL NETWORKS

Veronique Achard and Sebastian Lesage

12:30 - 12:50 Effects of signature mismatch on hyperspectral detection algorithms

Dimitris Manolakis, Thomas Cooley and John Jacobson

12:50 - 13:10 HYPER-CAM: HYPERSPECTRAL IR IMAGING APPLICATIONS IN DEFENCE
INNOVATIVE RESEARCH

Philippe Lagueux, Vincent Farley, Yan Montembeault and Kevin C. Gross

11:30 - 13:10 Session mon-o-1-b

Coastal and littoral areas, oceanic monitoring

Session Chairs: Audrey Minghelli-Roman, Université du Sud Toulon-Var, France

Michael Sears, University of the Witwatersrand, South Africa

11:30 - 11:50 MONITORING INLAND WATERS WITH THE APEX SENSOR, A WAVELET
APPROACH

Els Knaeps, Dries Raymaekers, Sindy Sterckx, Luc Bertels and Daniel Odermatt

11:50 - 12:10 ABOVE AND IN-WATER MEASUREMENTS OF REFLECTANCE AND
CHLOROPHYLL ALGORITHMS IN THE KAŠTELA BAY IN THE ADRIATIC SEA

Mak Kisevic, Mira Morovic, Amer Smailbegovic and Roko Andricevic

12:10 - 12:30 MAPPING MARINE PHYTOPLANKTON ASSEMBLAGES FROM HYPERSPECTRAL
REMOTE SENSING REFLECTANCES

Elena Torrecilla, Jaume Piera, Ismael F. Aymerich, Sergi Pons, Oliver Ross and Meritxell Vilaseca



w h i s p e r s

Monday, June 14, 2010

12:30 - 12:50 THE HYPER SPECTRAL IMAGER FOR THE COASTAL OCEAN (HICO)- DESIGN AND EARLY RESULTS
Daniel Korwan, Robert Lucke, Michael Corson, Jeffrey Bowles, Bo Gai Gao, Rong-Rong Li, Marcos Montes, William Snyder, Norm McGlothlin, Steve Butcher, Daniel Wood, Curt Davis and David Miller

12:50 - 13:10 SEA BED MAPPING IN THE LAGOON OF NEW CALEDONIA
Audrey Minghelli-Roman, Cécile Dupouy, Christophe Chevillon and Pascal Douillet

13:10 - 14:10 Lunch break

14:10 - 15:50 Session mon-o-2-a

Spatial-Spectral Hyperspectral Image Analysis (1)

Session Chairs: Paul Gader, University of Florida, USA
Alina Zare, University of Florida, USA

14:10 - 14:30 CLASSIFICATION OF HYPER SPECTRAL IMAGES BY USING MORPHOLOGICAL ATTRIBUTE FILTERS AND INDEPENDENT COMPONENT ANALYSIS
Mauro Dalla Mura, Alberto Villa, Jon Atli Benediktsson, Jocelyn Chanussot and Lorenzo Bruzzone

14:30 - 14:50 SPATIAL STRUCTURES DETECTION IN HYPER SPECTRAL IMAGES USING MATHEMATICAL MORPHOLOGY
Santiago Velasco-Forero and Jesus Angulo

14:50 - 15:10 SPATIAL-SPECTRAL PREPROCESSING FOR VOLUME-BASED ENDMEMBER EXTRACTION ALGORITHMS USING UNSUPERVISED CLUSTERING
Gabriel Martin and Antonio Plaza

15:10 - 15:30 A Vector SIFT operator for interest point detection in hyperspectral imagery
Leidy Dorado-Muñoz, Miguel Velez-Reyes, Amit Mukherjee and Badrinath Roysam

15:30 - 15:50 SPECTRAL IMAGE COMPLEXITY ESTIMATED THROUGH LOCAL CONVEX HULL VOLUME
David Messinger, Amanda Ziemann, Bill Basener and Ariel Schlamm

14:10 - 15:50 Session mon-o-2-b

Next Steps in Environmental Monitoring

Session Chairs: Andreas Müller, DLR, Germany
Anita Simic, University of Toronto, Canada

14:10 - 14:30 ACTIVE HYPER SPECTRAL LIDAR METHODS FOR OBJECT CLASSIFICATION
Sanna Kaasalainen, Juha Suomalainen, Teemu Hakala, Yuwei Chen, Esa Räikkönen, Eetu Puttonen and Harri Kaartinen

14:30 - 14:50 MAPPING Ni-Cu (PGE) BEARING ULTRAMAFIC ROCKS WITH HYPER SPECTRAL IMAGERY, NUNAVIK, CANADA
Derek Rogge, Benoit Rivard, Brian Grant and Jamie Pardy

14:50 - 15:10 VEGETATION MANAGEMENT OF UTILITY CORRIDORS USING HIGH-RESOLUTION HYPER SPECTRAL IMAGING AND LIDAR
Michael Frank, Zhihong Pan and Brian Raber



w h i s p e r s

Monday, June 14, 2010

15:10 - 15:30 SUPPORTING ENVIRONMENTAL REMEDIATION: HYPERSPECTRAL MAPPING OF RE-VEGETATION AREAS IMPACTED BY SMELTING OPERATIONS IN SUDBURY, CANADA

Peter White and Abdelgadir Abdelgasim

15:30 - 15:50 AUTONOMOUS LIGHTWEIGHT AIRBORNE SPECTROMETERS FOR GROUND REFLECTANCE MEASUREMENTS

Joel Kuusk and Andres Kuusk

15:50 - 16:20 Coffee break

**16:20 - 18:20 Session mon-o-3-a
Classification**

Session Chairs: Paolo Gamba, University of Pavia, Italy
Anna Brook, Tel-Aviv University, Israel

16:20 - 16:40 BENEFITS OF TEXTURAL CHARACTERIZATION FOR THE CLASSIFICATION OF HYPERSPECTRAL IMAGES

Guillaume Roussel, Véronique Achard, Alexandre Alakian and Jean-Claude Fort

16:40 - 17:00 INDEPENDENT COMPONENT DISCRIMINANT ANALYSIS FOR HYPERSPECTRAL IMAGE CLASSIFICATION

Alberto Villa, Jon Atli Benediktsson, Jocelyn Chanussot and Christian Jutten

17:00 - 17:20 CLASSIFICATION OF HYPERSPECTRAL IMAGE BASED ON MORPHOLOGICAL PROFILES AND MULTI-KERNEL SVM

Kun Tan and Peijun Du

17:20 - 17:40 ITERATIVE SPATIAL FILTERING FOR REDUCING INTRA-CLASS SPECTRAL VARIABILITY AND NOISE

Derek Rogge and Benoit Rivard

17:40 - 18:00 UNSUPERVISED CLUSTERING OF SOIL SPECTRAL CURVES TO OBTAIN THEIR STRONGER CORRELATION WITH SOIL PROPERTIES

Jerzy Cierniewski, Cezary Kaźmierowski, Krzysztof Kuśnierek, Jan Piekarczyk, Sławomir Królewicz, Marcin Guliński, Henryk Terelak, Tomasz Stuczyński and Barbara Maliszewska-Kordybach

18:00 - 18:20 ANOMALY DETECTION IN NON-STATIONARY BACKGROUNDS

Stanley Rotman, Nir Gorelik and Hadar Yehudai

**16:20 - 18:20 Session mon-o-3-b
Astrophysics and planetary exploration (1)**

Session Chairs: Sylvain Douté, Laboratoire de Planétologie de Grenoble, France
Yves Langevin, IAS Univ. Paris-Sud XI, France

16:20 - 16:40 GLOBAL MAPPING OF TITAN IN THE INFRARED USING A HEURISTIC APPROACH TO REDUCE THE ATMOSPHERIC SCATTERING COMPONENT

Stéphane Le Mouélic, Thomas Cornet, Sébastien Rodriguez, Christophe Sotin, Jason Barnes, Robert Brown, Olivier Bourgeois, Kevin Baines, Bonnie Buratti, Roger Clark and Philip Nicholson



w h i s p e r s

Monday, June 14, 2010

- 16:40 - 17:00 RETRIEVING MARS AEROSOL OPTICAL DEPTH FROM CRISM/MRO IMAGERY
Sylvain Douté and Xavier Ceamanos
- 17:00 - 17:20 SPARSITY-BASED DENOISING OF HYPERSPECTRAL ASTROPHYSICAL DATA WITH COLORED NOISE. APPLICATION TO THE MUSE INSTRUMENT
Sébastien Bourguignon, David Mary and Eric Slezak
- 17:20 - 17:40 SPECTRAL CONSTRAINTS ON THE COMPOSITION OF ACTIVE SLOPE STREAKS ON Mars
Amit Mushkin, Alan R Gillespie, David R Montgomery, B. Charlotte Schreiber and Raymond E Arvidson
- 17:40 - 18:00 RADIOMETRIC CHARACTERISATION OF A VNIR HYPERSPECTRAL IMAGING SYSTEM FOR ACCURATE ATMOSPHERIC CORRECTION
Lucas Martinez, Fernando Perez, Roman Arbiol and Anna Tarda
- 18:00 - 18:20 MULTI-BAND PROCESSING OF OBSERVATIONS OF THE POLAR REGIONS OF MARS WITH THE OMEGA IMAGING SPECTROMETER ON BOARD MARS EXPRESS
Yves Langevin, Mathieu Vincendon, Jean-Pierre Bibring, Brigitte Gondet, Sylvain Douté, Francois Poulet and Frederic Schmidt



w h i s p e r s

Tuesday, June 15, 2010
Overview

**08:30 - 09:30 Plenary 2 - Feature mining from a HS data cube for information mapping:
3D and beyond**

Xiuping Jia, Univ. of New South Wales, Australian Defence Force Academy, Australia
Session chair: Josée Lévesque, Defence Research & Development Canada

09:30 - 11:10 Session tue-o-1-a

Hyperspectral Data Processing for Defense and Security (2)

Session Chairs: Dirk Borghys, Royal Military Academy, Belgium
Nasser Nasrabadi, US Army Research Lab, USA

Session tue-o-1-b

Machine Learning for Analysis of Hyperspectral Data (1)

Session Chairs: Erzsébet Merényi, Rice University, USA
Jón Atli Benediktsson, University of Iceland, Iceland

11:10 - 11:40 Coffee break

11:40 - 13:00 Session tue-p-a

Applications in biomedical imagery, chemistry and mineralogy

Session Chair: David Bannon, Headwall Photonics, USA

Session tue-p-b

Monitoring of the vegetation and spectral invariants

Session Chair: Ivar Baarstad, NEO, Norway

Session tue-p-c

Models, calibration and compression

Session Chair: Stéphanie Delalieux, VITO, Belgium

13:00 - 14:00 Lunch break

14:00 - 15:40 Session tue-o-2-a

Spatial-Spectral Hyperspectral Image Analysis (2)

Session Chairs: Paul Gader, University of Florida, USA
Alina Zare, University of Florida, USA

Session tue-o-2-b

Forward Modeling of Hyperspectral Data

Session Chairs: Robert Sundberg, Spectral Sciences, Inc., USA
Emmett Lentilucci, Rochester Institute of Technology, USA

15:40 - 16:10 Coffee break

16:10 - 17:50 Session tue-o-3-a

Statistical vs. Geometric Unmixing Algorithms for Hyperspectral Data (1)

Session Chairs: Mario Parente, Stanford University, SETI Institute, USA
Antonio Plaza, University of Extremadura, Spain

Session tue-o-3-b

Monitoring of the vegetation

Session Chairs: Peter H. White, Canada Centre for Remote Sensing, Canada
Véronique Achard, ONERA, France



w h i s p e r s

Tuesday, June 15, 2010

**08:30 - 09:30 Plenary 2 - Feature mining from a HS data cube for information mapping:
3D and beyond**

Xiuping Jia, Univ. of New South Wales, Australian Defence Force Academy, Australia
Session chair: Josée Lévesque, **Defence Research & Development Canada**

09:30 - 11:10 Session tue-o-1-a

Hyperspectral Data Processing for Defense and Security (2)

Session Chairs: Dirk Borghys, Royal Military Academy, Belgium
Nasser Nasrabadi, US Army Research Lab, USA

09:30 - 09:50 A NEW ALGORITHM FOR LOCAL BACKGROUND SUPPRESSION IN
HYPERSPPECTRAL TARGET DETECTION

Stefania Matteoli, Nicola Acito, Marco Diani and Giovanni Corsini

09:50 - 10:10 CURRENT GROUND-BASED LWIR HIS REMOTE SENSING ACTIVITIES AT
DEFENSE R&D CANADA - VALCARTIER

Jean-Marc Thériault, Eldon Puckrin, Hugo Lavoie, Francois Bouffard, Caroline S.
Turcotte and Josée Lévesque

CURRENT AIRBORNE LWIR HSI REMOTE SENSING ACTIVITIES AT DEFENCE
R&D CANADA - VALCARTIER

Eldon Puckrin, Caroline S. Turcotte, Josée Lévesque, Jean-Marc Thériault, Hugo
Lavoie and Francois Bouffard

10:10 - 10:30 CLASSIFICATION FOR HYPERSPPECTRAL IMAGERY BASED ON SPARSE
REPRESENTATION

Yi Chen, Nasser Nasrabadi and Trac Tran

10:30 - 10:50 STUDY OF THE INFLUENCE OF PRE-PROCESSING ON LOCAL STATISTICS-
BASED ANOMALY DETECTOR RESULTS

Dirk Borghys and Perneel Christiaan

10:50 - 11:10 DETECTION OF OCCLUDED TARGETS USING THERMAL IMAGING
SPECTROSCOPY

Michal Shimoni, Christiaan Perneel and Jean-Philippe Gagnon

09:30 - 11:10 Session tue-o-1-b

Machine Learning for Analysis of Hyperspectral Data (1)

Session Chairs: Erzsébet Merényi, Rice University, USA
Jón Atli Benediktsson, University of Iceland, Iceland

09:30 - 09:50 THE ANGULAR KERNEL IN MACHINE LEARNING FOR HYPERSPPECTRAL DATA
CLASSIFICATION

Paul Honeine and Cédric Richard

09:50 - 10:10 LOCALLY CONSISTENT GRAPH REGULARIZATION BASED ACTIVE LEARNING
FOR HYPERSPPECTRAL IMAGE CLASSIFICATION

Wei Di and Melba Crawford

10:10 - 10:30 ADAPTING LEARNING PARAMETER TRANSITION IN THE GENERALIZED
LEARNING VECTOR QUANTIZATION FAMILY OF CLASSIFIERS

Sarah Bischoff, Michael Mendenhall, Andy Rice and Juan Vasquez



w h i s p e r s

Tuesday, June 15, 2010

10:30 - 10:50 A MARKOVIAN GENERALIZATION OF SUPPORT VECTOR MACHINES FOR CONTEXTUAL SUPERVISED CLASSIFICATION OF HYPERSPECTRAL IMAGES
Gabriele Moser and Sebastiano Serpico

10:50 - 11:10 DIVERGENCE BASED VECTOR QUANTIZATION OF SPECTRAL DATA
Thomas Villmann and Sven Haase

11:10 - 11:40 Coffee break

11:40 - 13:00 Session tue-p-a

Applications in biomedical imagery, chemistry and mineralogy

Session Chair: David Bannon, Headwall Photonics, USA

01 MAPPING P-T CONDITIONS IN HYDROTHERMAL SYSTEMS USING HYPERSPECTRAL REMOTE SENSING AND OBJECT BASED TECHNIQUES
Freek Vandermeer

02 AUTOMATED NEUTRAL REGION SELECTION USING SUPERPIXELS
Lukas Mandrake, David Thompson, Martha Gilmore, Rebecca Castano and Eldar Dobra

03 SPECTRAL ANALYSIS AND UNSUPERVISED SVM CLASSIFICATION FOR SKIN HYPER-PIGMENTATION CLASSIFICATION
Sylvain Prigent, Xavier Descombes, Didier Zugaj and Josiane Zerubia

04 HYPERSPECTRAL LOW-LIGHT CAMERA FOR IMAGING OF BIOLOGICAL SAMPLES
Julio Hernandez-palacios, Lise Randeberg, Ivar Baarstad, Trond Løke and Torbjørn Skauli

05 NON-NEGATIVE MATRIX FACTORIZATION UNDER SPARSITY CONSTRAINTS TO UNMIX IN VIVO SPECTRALLY RESOLVED ACQUISITIONS
Anne-Sophie Montcuquet, Lionel Hervé, Fabrice Navarro, Jean-Marc Dinten and Jérôme I. Mars

06 USING TEXTURE AND FRACTAL ANALYSIS FOR CLASSIFICATION OF CELL NUCLEI FROM LIGHT SCATTERING SPECTROSCOPIC IMAGES
Radu Dobrescu, Matei Dobrescu and Loretta Ichim

11:40 - 13:00 Session tue-p-b

Monitoring of the vegetation and spectral invariants

Session Chair: Ivar Baarstad, NEO, Norway

01 HYPERSPECTRAL REMOTE SENSING OF VEGETATION GROWING CONDITION AND REGIONAL ENVIRONMENT
Bing Zhang, Di Wu, Li Zhang, Quanjun Jiao and Qingting Li

02 SPECTRAL ANGLE MAPPER CLASSIFICATION OF FLUORESCENCE HYPERSPECTRAL IMAGE FOR AFLATOXIN CONTAMINATED CORN
Haibo Yao, Zuzana Hruska, Russell Kincaid, Ambrose Ononye, Robert Brown and Thomas Cleveland



- 03 CLUSTERING OF CROP PHENOTYPES BY MEANS OF HYPERSPECTRAL SIGNATURES USING ARTIFICIAL NEURAL NETWORKS
Udo Seiffert, Felix Bollenbeck, Hans-Peter Mock and Andrea Matros
- 04 GTI METHOD FOR WILT OAK TREES DETECTION
Massimo Dell'Erba and Kuniaki Uto
- 05 SNNS APPLICATION FOR CROP CLASSIFICATION USING HYMAP DATA
Dawid Olesiuk, Martin Bachmann, Martin Habermeyer, Wieke Heldens, Andreas Müller and Bogdan Zagajewski
- 06 CANOPY VERTICAL STRUCTURE USING MODIS BIDIRECTIONAL REFLECTANCE DATA
Zhuosen Wang, Crystal Schaaf, Philip Lewis, Yuri Knyazikhin, Mitchell Schull, Alan Strahler, Ranga Myneni and Mark Chopping
- 07 OBSERVED SPECTRAL INVARIANT BEHAVIOR OF ZENITH RADIANCE IN THE TRANSITION ZONE BETWEEN CLOUD-FREE AND CLOUDY REGIONS
Alexander Marshak, Yuri Knyazikhin, Christine Chiu and Warren Wiscombe
- 08 A PHYSICAL INTERPRETATION OF THE CORRELATION BETWEEN CANOPY ALBEDO AND NITROGEN USING HYPERSPECTRAL DATA
Mitchell Schull, Liang Xu, Yuri knyazikhin and Ranga Myneni
- 09 MODELING RECOLLISION AND ESCAPE PROBABILITIES USING THE STOCHASTIC RADIATIVE TRANSFER EQUATION
Liang Xu, Yuri Knyazikhin and Mitchell Schull
- 10 POTENTIAL OF CONTINUUM REMOVED REFLECTANCE SPECTRAL FEATURES ESTIMATING NITROGEN NUTRITION IN RICE CANOPY LEVEL
Jinheng Zhang

11:40 - 13:00 Session tue-p-c

Models, calibration and compression

Session Chair: Stéphanie Delalieux, VITO, Belgium

- 01 IMAGE SIMULATION OF GEOSTATIONARY SENSOR DEDICATED TO OCEAN COLOR
Manchun Lei, Audrey Minghelli-Roman, Sandrine Mathieu and Pierre Gouton
- 02 SOIL REFLECTANCE MODELING & HYPERSPECTRAL MIXTURE ANALYSIS: TOWARDS VEGETATION SPECTRA MINIMIZING THE SOIL BACKGROUND CONTAMINATION
Ben Somers, Laurent Tits, Willem W Verstraeten and Pol Coppin
- 03 MONTE CARLO BASED HYPERSPECTRAL SCENE SIMULATION
Robert Sundberg, Steven Richtsmeier and Raymond Haren
- 04 THE EFFECTS OF ATMOSPHERIC MIS-ESTIMATION ON HYPERSPECTRAL-BASED ADAPTIVE MATCHED FILTER TARGET DETECTION AS MEASURED BY THE BHATTACHARYYA COEFFICIENT
Allan Yarbrough, Michael Mendenhall and Richard Martin



- 05 REFLECTANCE SPECTRA OF RAMI STANDS IN ESTONIA
Andres Kuusk, Joel Kuusk, Mait Lang and Tiit Nilson
- 06 THERMAL INFRARED RADIOSITY AND HEAT DIFFUSION MODEL VERIFICATION
AND VALIDATION
Iryna Danilina, Alan Gillespie, Matthew Smith, Lee Balick and Elsa Abbott
- 07 CALIBRATION OF CRISM/MRO APPARENT WAVELENGTHS USING SYNTHETIC
DATA
Xavier Ceamanos and Sylvain Douté
- 08 ATMOSPHERIC CORRECTION OF AIRBORNE INFRARED HYPERSPECTRAL
IMAGES BY DIRECT ESTIMATION OF THE RADIATIVE TERMS
François Lemaître, Laurent Poutier and Yannick Boucher
- 09 LOSSLESS COMPRESSION OF HYPERSPECTRAL DATA OBTAINED FROM
FOURIER-TRANSFORM INFRARED IMAGING SPECTROMETERS
Julien Roy, Simon Potvin, Jean-Daniel Deschênes and Jérôme Genest
- 10 CALIBRATION OF A CHEMOMETRICAL MODEL FROM FIELD HYPERSPECTRAL
CLOSE-RANGE IMAGES: TAKING INTO ACCOUNT LEAF INCLINATION AND
MULTIPLE REFLECTION EFFECTS
Nathalie Vigneau, Gilles Rabatel, Pierre Roumet and Martin Ecarnot
- 13:00 - 14:00 Lunch break**
- 14:00 - 15:40 Session tue-o-2-a**
Spatial-Spectral Hyperspectral Image Analysis (2)
Session Chairs: Paul Gader, University of Florida, USA
Alina Zare, University of Florida, USA
- 14:00 - 14:20 INTEREST SEGMENTATION OF HYPERSPECTRAL IMAGERY
Ariel Schlamm, David Messinger and William Basener
- 14:20 - 14:40 SPATIAL MULTIPLE INSTANCE LEARNING FOR HYPERSPECTRAL IMAGE
ANALYSIS
Jeremy Bolton and Paul Gader
- 14:40 - 15:00 EXPLOITING SPATIAL INFORMATION IN SEMI-SUPERVISED HYPERSPECTRAL
IMAGE SEGMENTATION
Jun Li, Jose Bioucas-Dias and Antonio Plaza
- 15:00 - 15:20 SPATIALLY-SMOOTH PIECE-WISE CONVEX ENDMEMBER DETECTION.
Alina Zare, Ouïem Bchir, Hichem Frigui and Paul Gader
- 15:20 - 15:40 A SPATIAL/SPECTRAL PROTOCOL FOR QUALITY ASSURANCE OF
DECOMPRESSED HYPERSPECTRAL DATA FOR PRACTICAL APPLICATIONS
Anna Brook and Eyal Ben-Dor



w h i s p e r s

Tuesday, June 15, 2010

14:00 - 15:40 Session tue-o-2-b

Forward Modeling of Hyperspectral Data

Session Chairs: Robert Sundberg, Spectral Sciences, Inc., USA
Emmett Lentilucci, Rochester Institute of Technology, USA

- 14:00 - 14:20 FULL SPECTRUM BROKEN CLOUD SCENE SIMULATION
Steven Richtsmeier and Robert Sundberg
- 14:20 - 14:40 VALIDATION OF IN-WATER 3D RADIATIVE TRANSFER USING DIRSIG
Jacqueline Speir, John Schott, Adam Goodenough and Scott Brown
- 14:40 - 15:00 UTILITY ASSESSMENT OF A MULTISPECTRAL SNAPSHOT LWIR IMAGER
Jeffrey Mercier, Toby Townsend and Robert Sundberg
- 15:00 - 15:20 AN EXTENDED-WAVELENGTH EXOPLANET SPECTRAL MODEL BASED ON MODTRAN5
Lawrence Bernstein, Alexander Berk, Marsha Fox and Robert Sundberg
- 15:20 - 15:40 HYPERSPECTRAL TARGET DETECTION IN A WHITENED SPACE UTILIZING FORWARD MODELING CONCEPTS
Emmett Lentilucci and Peter Bajorski

15:40 - 16:10 Coffee break

16:10 - 17:50 Session tue-o-3-a

Statistical vs. Geometric Unmixing Algorithms for Hyperspectral Data (1)

Session Chairs: Mario Parente, Stanford University, SETI Institute, USA
Antonio Plaza, University of Extremadura, Spain

- 16:10 - 16:30 SPECTRAL UNMIXING OF AIRBORNE HYPERSPECTRAL IMAGERY FOR MAPPING GIANT REED INFESTATIONS
Chenghai Yang, Qian Du, James Everitt, John Goolsby and Nicolas Younan
- 16:30 - 16:50 A NEURAL NETWORK APPROACH FOR PIXEL UNMIXING IN HYPERSPECTRAL DATA
Giorgio Licciardi and Fabio Del Fratte
- 16:50 - 17:10 A GENERALIZED KERNEL FOR AREAL AND INTIMATE MIXTURES
Joshua Broadwater and Amit Banerjee
- 17:10 - 17:30 ROBUST HYPERSPECTRAL DATA UNMIXING WITH SPATIAL AND SPECTRAL REGULARIZED NMF
Alexis Huck and Mireille Guillaume
- 17:30 - 17:50 IDENTIFIABILITY OF GEOMETRIC MODELS FOR LINEAR UNMIXING AT DIFFERENT SPATIAL RESOLUTIONS IN HYPERSPECTRAL UNMIXING
Andrea Santos-Garcia and Miguel Velez-Reyes



w h i s p e r s

Tuesday, June 15, 2010

16:10 - 17:50 Session tue-o-3-b

Monitoring of the vegetation

Session Chairs: Peter H. White, Canada Centre for Remote Sensing, Canada
Véronique Achard, ONERA, France

- 16:10 - 16:30 CLASSIFICATION OF HIGH-MOUNTAIN PLANT COMMUNITIES USING ARTIFICIAL NEURAL NETS AND HYPERSPECTRAL DATA
Bogdan Zagajewski
- 16:30 - 16:50 DERIVATION OF STRESS SEVERITIES IN WHEAT FROM HYPERSPECTRAL DATA USING SUPPORT VECTOR REGRESSION
Thorsten Mewes, Björn Waske, Jonas Franke and Gunter Menz
- 16:50 - 17:10 STATISTICAL ANALYSIS OF GROWTH LEVELS OF RICE PADDY BASED ON HYPERSPECTRAL IMAGERY WITH HIGH SPATIAL RESOLUTION
Kuniaki Uto, Yukio Kosugi and Jiro Sasaki
- 17:10 - 17:30 MONITORING HEATHLAND HABITAT STATUS USING HYPERSPECTRAL IMAGE CLASSIFICATION AND UNMIXING
Stephanie Delalieux, Ben Somers, Birgen Haest, Lammert Kooistra, Sander Mucher and Jeroen Vanden Borre
- 17:30 - 17:50 THE DETAILED VEGETATION CLASSIFICATION FOR AIRBORNE HYPERSPECTRAL REMOTE SENSING IMAGERY BY COMBINING PCA AND PP
Lianpeng Zhang, Qinhua Liu, Changsheng Zhao, Hui Lin and Huasheng Sun



w h i s p e r s

Wednesday, June 16, 2010 Overview

08:30 - 09:30 Plenary 3 - Hyperspectral applications for forestry

David Goodenough, University of Victoria, Canada
Session chair: Benoit Rivard, University of Alberta, Canada

09:30 - 11:10 Session wed-o-1-a

Data and decision fusion

Session chairs: Jenny Q. Du, Mississippi State University, USA
Luciano Alparone, University of Florence, Italy

Session wed-o-1-b

Machine Learning for Analysis of Hyperspectral Data (2)

Session Chairs: Erzsébet Merényi, Rice University, USA
Jón Atli Benediktsson, University of Iceland, Iceland

11:10 - 11:40 Coffee break

11:40 - 13:00 Session wed-p-a

Endmembers and unmixing

Session chair: Gabriele Moser, University of Genoa, Italy

Session wed-p-b

Astrophysics and planetary exploration (2)

Session chair: Bin Luo, Grenoble Institute of Technology, France

Session wed-p-c

Applications in hyperspectral imagery

Session chair: Björn Waske, University of Bonn, Germany

13:00 - 14:00 Lunch break

14:00 - 15:40 Session wed-o-2-a

Monitoring vegetation at multiple scales: canopy structure and spectrally invariant parameters

Session chairs: Miina Rautiainen, University of Helsinki, Finland
Yuri Knyazikhin, Boston University, USA

Session wed-o-2-b

Feature extraction, dimension reduction

Session chairs: Melba Crawford, Purdue University, USA
Peijun Du, China University of Mining and Technology, China

15:40 - 16:10 Coffee break

16:10 - 17:50 Session wed-o-3-a

Exploitation & Evaluation of Synthetic Hyperspectral Data.

Session Chairs: Michael J. Mendenhall, Air Force Institute of Technology, USA
John Kerekes, Rochester Institute of Technology, USA

Session wed-o-3-b

Statistical vs. Geometric Unmixing Algorithms for Hyperspectral Data (2)

Session Chairs: Mario Parente, Stanford University, SETI Institute, USA
Antonio Plaza, University of Extremadura, Spain



08:30 - 09:30 Plenary 3 - Hyperspectral applications for forestry

David Goodenough, University of Victoria, Canada
Session chair: Benoit Rivard, University of Alberta, Canada

09:30 - 11:10 Session wed-o-1-a

Data and decision fusion

Session chairs: Jenny Q. Du, Mississippi State University, USA
Luciano Alparone, University of Florence, Italy

09:30 - 09:50 SYNERGISTIC USE OF LANDSAT AND HYPERION IMAGERIES FOR ECOLOGICAL SITE CLASSIFICATION IN RANGELANDS

Paula Blanco, Héctor del Valle, Pablo Bouza, Graciela Metternicht and Alfred Zinck

09:50 - 10:10 EFFICIENT COMBINATION OF MULTIPLE HYPERSPECTRAL DATA PROCESSING CHAINS USING BINARY DECISION TREES

Karoly Bakos and Paolo Gamba

10:10 - 10:30 HYPERSPECTRAL PANSHARPENING BASED ON MODULATION OF PIXEL SPECTRA

Andrea Garzelli, Luca Capobianco, Luciano Alparone, Bruno Aiazzi, Stefano Baronti and Massimo Selva

10:30 - 10:50 NON-NEGATIVE MATRIX FACTORIZATION PANSHARPENING OF HYPERSPECTRAL DATA: AN APPLICATION TO MID-INFRARED ASTRONOMY

Olivier Berne

10:50 - 11:10 FUSION OF HYPERSPECTRAL IMAGES AND LIDAR DATA FOR CIVIL ENGINEERING STRUCTURE MONITORING

Anna Brook, Eyal Ben-Dor and Rolf Richter

09:30 - 11:10 Session wed-o-1-b

Machine Learning for Analysis of Hyperspectral Data (2)

Session Chairs: Erzsébet Merényi, Rice University, USA
Jón Atli Benediktsson, University of Iceland, Iceland

09:30 - 09:50 COMPARISON OF ADVANCED NEURAL NETWORK ARCHITECTURES FOR HYPERSPECTRAL DATA CLASSIFICATION

Prashanth Reddy Marpu, Giorgio Licciardi, Paolo Gamba and Fabio Del Frate

09:50 - 10:10 DIRICHLET PROCESS BASED CONTEXT LEARNING FOR MINE DETECTION IN HYPERSPECTRAL IMAGERY

Kenneth D. Morton, Jr., Peter Torrione and Leslie Collins

10:10 - 10:30 AUTOMATIC SELECTION OF INFORMATIVE SAMPLES FOR SVM-BASED CLASSIFICATION OF HYPERSPECTRAL DATA USING LIMITED TRAINING SETS

Antonio Plaza and Javier Plaza

10:30 - 10:50 SUPERVISED HYPERSPECTRAL IMAGE SEGMENTATION USING ACTIVE LEARNING

Jun Li, José Bioucas Dias and Antonio Plaza



10:50 - 11:10 SIMPLIFYING SUPPORT VECTOR MACHINES FOR CLASSIFICATION OF
HYPERSPPECTRAL IMAGERY AND SELECTION OF RELEVANT FEATURES
Andreas Rabe, Sebastian van der Linden and Patrick Hostert

11:10 - 11:40 Coffee break

11:40 - 13:00 Session wed-p-a

Endmembers and unmixing

Session chair: Gabriele Moser, University of Genoa, Italy

- 01 AN EVALUATION OF THREE ENDMEMBER EXTRACTION ALGORITHMS: ATGP,
ICA-EEA & VCA
Isaac Gerg
- 02 MULTIPLE MODEL ENDMEMBER DETECTION BASED ON SPECTRAL AND
SPATIAL INFORMATION
Ouiem Bchir, Hichem Frigui, Alina Zare and Paul Gader
- 03 USING RANDOM MATRIX THEORY TO DETERMINE THE NUMBER OF
ENDMEMBERS IN A HYPERSPPECTRAL IMAGE
Bergh and Renaud Mathieu
- 04 MAPPING SEALED SURFACES FROM CHRIS/PROBA DATA: A MULTIPLE
ENDMEMBER UNMIXING APPROACH
Luca Demarchi, Frank Canters, Jonathan Cheung-Wai Chan and Tim Van de Voorde
- 05 SPECTRAL-TEXTURAL ENDMEMBER EXTRACTION
Maciel Zortea, Devis Tuia, Fabio Pacifici and Antonio Plaza
- 06 ON THE USE OF SPECTRAL LIBRARIES TO PERFORM SPARSE UNMIXING OF
HYPERSPPECTRAL DATA
Marian-Daniel Iordache, Jose Bioucas-Dias and Antonio Plaza
- 07 ACCURACY AND PERFORMANCE OF OPTIMIZED BAYESIAN SOURCE
SEPARATION FOR HYPERSPPECTRAL UNMIXING
Frédéric Schmidt, Albrecht Schmidt, Erwan Tréguier, Maël Guiheneuf, Saïd Moussaoui
and Nicolas Dobigeon
- 08 A MODIFIED PIXEL PURITY INDEX METHOD FOR HYPERSPPECTRAL IMAGES
Peter Bajorski and Niek Sanders.
- 09 QUANTITATIVE DETECTION OF SEDIMENT DUST ANALOG OVER GREEN
CANOPY USING AIRBORNE HYPERSPPECTRAL IMAGERY
Anna Brook and Eyal Ben-Dor
- 10 A COMPARISON OF DETERMINISTIC AND PROBABILISTIC APPROACHES TO
ENDMEMBER REPRESENTATION
Alina Zare, Ouiem Bchir, Hichem Frigui and Paul Gader
- 11 IMPACT OF COLLINEARITY ON LINEAR AND NONLINEAR SPECTRAL MIXTURE
ANALYSIS
Xiuping Jia, Xuehong Chen, Jin Chen and Jin Wu



- 12 DETECTION OF MISALLOCATED ENDMEMBERS THROUGH THE NETWORK BASED METHOD
Dimitris Sykas and Vassilia Karathanassi

11:40 - 13:00 Session wed-p-b

Astrophysics and planetary exploration (2)

Session chair: Bin Luo, Grenoble Institute of Technology, France

- 01 SYSTEMATIC DETECTION OF TITAN'S CLOUDS IN VIMS/CASSINI HYPER SPECTRAL IMAGES USING A NEW AUTOMATED ALGORITHM
Sebastien Rodriguez, Frederic Schmidt, Said Moussaoui, Stephane Le Mouelic, Pascal Rannou, Jason W. Barnes, Christophe Sotin, Robert H. Brown, Kevin H. Baines, Bonnie J. Buratti, Roger N. Clark and Phil D. Nicholson
- 02 MARTIAN AEROSOL ABUNDANCE ESTIMATION BASED ON UNMIXING OF HYPER SPECTRAL IMAGERY
Bin Luo, Xavier Ceamanos, Sylvain Douté and Jocelyn Chaussoot
- 03 THE PLANETARY EMISSIVITY LABORATORY (PEL) AT DLR, BERLIN
Alessandro Maturilli, Joern Helbert and Mario D'Amore
- 04 MODAL MINERALOGY OF PLANETARY SURFACES FROM VISIBLE AND NEAR INFRARED SPECTRAL DATA
Francois Poulet, Bethany L. Ehlmann, John F. Mustard, Mathieu Vincendon and Yves Langevin

11:40 - 13:00 Session wed-p-c

Applications in hyperspectral imagery

Session chair: Björn Waske, University of Bonn, Germany

- 01 HYPER SPECTRAL ANOMALY DETECTOR BASED ON VARIABLE NUMBER OF LINEAR PREDICTORS
Edisanter Lo
- 02 A SPECTRAL ANOMALY DETECTOR IN HYPER SPECTRAL IMAGES BASED ON A NON-GAUSSIAN MIXTURE MODEL
Tiziana Veracini, Stefania Matteoli, Marco Diani, Giovanni Corsini and Sergio Ugo de Ceglie
- 03 ARCHITECTURE OF THE REAL-TIME TARGET DETECTION PROCESSING IN AN AIRBORNE HYPER SPECTRAL DEMONSTRATOR SYSTEM
Trym Vegard Haavardsholm, Gunnar Arisholm, Amela Kavara and Torbjørn Skauli
- 04 EXTRACTION OF URBAN IMPERVIOUS SURFACE FROM HYPER SPECTRAL REMOTE SENSING IMAGE
Peijun Du, Junshi Xia, Wen Cao and Xiaoling Wang
- 05 HYPER SPECTRAL TECHNIQUES FOR WATER QUALITY MONITORING: APPLICATION TO THE "SACCA DI GORO" – ITALY
Luigi Alberotanza, Federica Braga, Rosa Maria Cavalli, Stefano Pignatti and Federico Santini



- 06 COMPARISON BETWEEN HYPERSPECTRAL IRRADIANCE REFLECTANCE AND DIFFUSE ATTENUATION COEFFICIENT AS INDICATORS OF ALGAE PRESENCE IN THE WATER COLUMN
Ismael F. Aymerich, Sergi Pons, Jaume Piera, Elena Torrecilla and Oliver Ross

13:00 - 14:00 Lunch break

14:00 - 15:40 Session wed-o-2-a

Monitoring vegetation at multiple scales: canopy structure and spectrally invariant parameters

Session chairs: Miina Rautiainen, University of Helsinki, Finland
Yuri Knyazikhin, Boston University, USA

- 14:00 - 14:20 ON CANOPY SPECTRAL INVARIANTS AND HYPERSPECTRAL RAY TRACING
Philip Lewis and Mathias Disney
- 14:20 - 14:40 THE PHYSICS OF SPECTRAL INVARIANTS
Matti Möttöus
- 14:40 - 15:00 ESTIMATING CANOPY SPECTRAL INVARIANTS FROM GROUND REFERENCE AND REMOTE SENSING DATA
Miina Rautiainen, Pauline Stenberg, Petr Lukes, Matti Mottus and Janne Heiskanen
- 15:00 - 15:20 THE APPLICATION OF SPECTRAL INVARIANTS FOR DISCRIMINATION OF CROPS USING CHRIS-PROBA DATA
Pedro Latorre Carmona, Mitchell Schull, Yuri Knyazikhin and Filiberto Pla
- 15:20 - 15:40 A PHYSICALLY BASED APPROACH IN RETRIEVING VEGETATION LEAF AREA INDEX FROM LANDSAT SURFACE REFLECTANCE DATA
Sangram Ganguly, Ramakrishna R. Nemani, Yuri Knyazikhin, Weile Wang, Hirofumi Hashimoto, Peter Votava, Andrew Michaelis, Cristina Milesi, Jennifer L. Dungan, Forrest S. Melton and Ranga B. Myneni

14:00 - 15:40 Session wed-o-2-b

Feature extraction, dimension reduction

Session chairs: Melba Crawford, Purdue University, USA
Peijun Du, China University of Mining and Technology, China

- 14:00 - 14:20 Investigation of Virtual Dimensionality and Broken Stick Rule for hyperspectral images
Peter Bajorski
- 14:20 - 14:40 STOCHASTIC FEATURE SELECTION WITH DISTRIBUTED FEATURE SPACING FOR HYPERSPECTRAL DATA
Jeffrey Clark, Michael Mendenhall and Gilbert Peterson
- 14:40 - 15:00 VIRTUAL DIMENSIONALITY ESTIMATION FOR HYPERSPECTRAL IMAGERY WITH A FRACTAL-BASED METHOD
Qian Du
- 15:00 - 15:20 DIMENSIONALITY REDUCTION OF HYPERSPECTRAL DATA BASED ON CENTROID FEATURE
Jayanta Kumar Ghosh and Kriti Mukherjee



w h i s p e r s

Wednesday, June 16, 2010

15:20 - 15:40 FEATURE SELECTION BASED ON ANT COLONY ALGORITHM FOR
HYPERSPETRAL REMOTE SENSING IMAGES
Farhad Samadzadegan and Tahmineh Partovi

15:40 - 16:10 Coffee break

16:10 - 17:50 Session wed-o-3-a

Exploitation & Evaluation of Synthetic Hyperspectral Data.

Session Chairs: Michael J. Mendenhall, Air Force Institute of Technology, USA
John Kerekes, Rochester Institute of Technology, USA

16:10 - 16:30 TARGET DISCRIMINATION VIA OPTIMAL WAVELENGTH BAND SELECTION WITH
SYNTHETIC HYPERSPETRAL IMAGERY
Zhong Lu, Andrew Rice, John Kerekes and Juan Vasquez

16:30 - 16:50 DYNAMIC IMAGE SIMULATIONS FOR ADAPTIVE SENSOR PERFORMANCE
PREDICTIONS
John Kerekes and David Pogorzala

16:50 - 17:10 USING SPATIAL CORRESPONDENCES FOR HYPERSPETRAL KNOWLEDGE
TRANSFER: EVALUATION ON SYNTHETIC DATA
Brian Bue and Erzsebet Merenyi

17:10 - 17:30 IMPROVED CHANGE DETECTION THROUGH POST CHANGE CLASSIFICATION:
A CASE STUDY USING SYNTHETIC HYPERSPETRAL IMAGERY
Karmon Vongsy and Michael Mendenhall

17:30 - 17:50 MODELING THE HYPERSPETRAL REFLECTANCE SIGNAL OF MOIST SANDY
SOILS
Ben Somers, Willem W. Verstraeten, Stephanie Delalieux and Pol Coppin

16:10 - 17:50 Session wed-o-3-b

Statistical vs. Geometric Unmixing Algorithms for Hyperspectral Data (2)

Session Chairs: Mario Parente, Stanford University, SETI Institute, USA
Antonio Plaza, University of Extremadura, Spain

16:10 - 16:30 SURVEY OF GEOMETRIC AND STATISTICAL UNMIXING ALGORITHMS FOR
HYPERSPETRAL IMAGES
Mario Parente and Antonio Plaza

16:30 - 16:50 MARKOV RANDOM FIELDS FOR JOINT UNMIXING AND SEGMENTATION OF
HYPERSPETRAL IMAGES
Olivier Eches, Nicolas Dobigeon and Jean-Yves Tourneret.

16:50 - 17:10 CONTROLLED SPECTRAL UNMIXING USING EXTENDED SUPPORT VECTOR
MACHINES
Xiuping Jia and Chandrama Dey

17:10 - 17:30 A ROBUST ALTERNATING VOLUME MAXIMIZATION ALGORITHM FOR
ENDMEMBER EXTRACTION IN HYPERSPETRAL IMAGES
ArulMurugan Ambikapathi, Tsung-Han Chan, Wing-Kin Ma and Chong-Yung Chi



Wednesday, June 16, 2010

w h i s p e r s

17:30 - 17:50 ALTERNATING DIRECTION ALGORITHMS FOR CONSTRAINED SPARSE REGRESSION: APPLICATION TO HYPERSPETRAL UNMIXING

José Bioucas-Dias and Mário Figueiredo

17:50 - 18:00 Concluding remarks, closing of the workshop