
(WHISPERS 2011)

Lisbon, Portugal
6-9 June 2011
07:30 - 08:30  Registration

08:30 - 09:00  Opening of the workshop

09:00 - 10:00  Plenary 1
Nonlinear Manifolds for Feature Extraction: Opportunities and Challenge  
Dr Melba Crawford, Purdue University, USA  
Session chair: Jon Atli Benediktsson, University of Iceland, Iceland

10:00 - 11:40  Session tue-o-1-a
Recent advances in Spectral Unmixing of Hyperspectral Data (1)  
Session Chairs: Antonio Plaza, University of Extremadura, Spain  
Mario Parente, Brown University, USA

10:00-10:20  SPECTRAL UNMIXING USING DISTANCE GEOMETRY  
Rob Heylen and Paul Scheunders

10:20-10:40  JOINT SPECTRAL CLASSIFICATION AND UNMIXING USING ADAPTIVE PIXEL NEIGHBORHOODS  
Olivier Eches, Jon Atli Benediktsson, Nicolas Dobigeon and Jean-Yves Tourneret

10:40-11:00  ON THE INTEREST OF REGULARIZED NMF ALGORITHMS VERSUS GEOMETRICAL ALGORITHMS  
Mireille Guillaume, Alexis Huck, Weishi Chen, Guillaume Olier and Manuel Grizonnet

11:00-11:20  BILINEAR MODELS FOR NONLINEAR UNMIXING OF HYPERSPECTRAL IMAGES  
Yoann Altmann, Nicolas Dobigeon and Jean-Yves Tourneret

11:20-11:40  INTERCOMPARISON AND VALIDATION OF TECHNIQUES FOR SPECTRAL UNMIXING OF HYPERSPECTRAL IMAGES: A PLANETARY CASE STUDY  
Sylvain Doute, Xavier Ceamanos, Bin Luo, Frédéric Schmidt, Gwenaël, Jouannic and Jocelyn Chanussot

Session tue-o-1-b
Application of Hyperspectral imaging on Agricultural and Ecological Systems  
Session Chairs: Xujun Ye, Zhejiang University, China  
Josée Levesque, Defence Research & Development Canada

10:00-10:20  USING HYPERSPECTRAL REMOTE SENSING DATA FOR RETRIEVING TOTAL CANOPY CHLOROPHYLL AND NITROGEN CONTENT  
Jan Cievers and Lammert Kooistra

10:20-10:40  REGULARIZATION OF DISCRIMINANT ANALYSIS FOR THE STUDY OF BIODIVERSITY IN HUMID TROPICAL FORESTS  
Jean-Baptiste Feret, Gregory P. Asner and Stephane Jacquemoud

10:40-11:00  ESTIMATION OF WATER COLUMN PARAMETERS WITH A MAXIMUM LIKELIHOOD APPROACH  
Sylvain Jay and Mireille Guillaume

11:00-11:20  NARROWBAND SPECTRAL INDICES FOR THE ESTIMATION OF CHLOROPHYL ALONG A PRECIPITATION GRADIENT  
Reza Amiri, Jason Beringer and Peter Isaac

11:20-11:40  APPLICATION OF AIRBORNE HYPERSPECTRAL IMAGERY TO ESTIMATING FRUIT YIELD IN CITRUS  
Xujun Ye and Kenshi Sakai
11:40 - 12:10  Coffee break

12:10 - 13:10  Panel discussion
Session chair: Paul Gader, University of Florida, USA

13:10 - 14:30  Lunch break

14:30 - 16:10  Session tue-o-2-a
Astrophysics
Session Chairs: Sylvain Douté, IPAG, France
Sébastien Bourguignon, Observatoire de la Côte d'Azur, France

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Nasser M Nasrabadi, US Army Research Lab, USA

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Michael Sears, University of the Witwatersrand, South Africa

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Vincent Mazet, Université de Strasbourg, France

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15:30-15:50 SPECTRAL RANGE SENSITIVITY ANALYSIS TO IMPROVE HYPERSPECTRAL REMOTE SENSING OF PHYTOPLANKTON BIODIVERSITY IN THE OCEAN. Elena Torrecilla, Jaume Plera, Astrid Bracher, Bettina B. Taylor and Anja Bernhardt

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16:10 - 16:40 Coffee break

16:40 - 18:20 Session wed-o-3-a
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Session Chairs: Jeremy Bolton, University of Florida, USA
Michal Shimoni, SIC-RMA, Belgium

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17:00-17:20 COMPARISON OF RADIATIVE TRANSFER MODEL INVERSIONS TO ESTIMATE VEGETATION PHYSIOLOGICAL STATUS BASED ON HYPERSPECTRAL DATA. Sebastian Preidl and Daniel Doktor

17:20-17:40 FAST MONTE CARLO-ASSISTED SIMULATION OF HYPERSPECTRAL EARTH BACKGROUNDS. Steven Adler-Golden, Steven Richtsmeier, Alexander Berk and James Duff

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Session Chairs: Erzsébet Merényi, Rice University, USA
Michael J. Mendenhall, Air Force Institute of Technology, USA

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Ariel Schlamm, The MITRE Corporation, USA

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Recent advances in Spectral Unmixing of Hyperspectral Data (2)
Session Chairs: Mario Parente, Brown University, USA
Antonio Plaza, University of Extremadura, Spain

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<td>VECTOR DATA DESCRIPTION</td>
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<td>15:10-15:30</td>
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<td>METHODS TO FIND SUB-PIXEL TARGETS IN HYPERSPECTRAL DATA</td>
<td>Christoph Borel</td>
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<td>15:30-15:50</td>
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<td>ELLIPSOID-SIMPLEX HYBRID FOR HYPERSPECTRAL ANOMALY DETECTION</td>
<td>James Theiler</td>
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<td>15:50-16:10</td>
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<td>AUTOMATION OF RARE TARGET DETECTION VIA ADAPTIVE FUSION</td>
<td>Steven Adler-Golden and Robert Sundberg</td>
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<td>Session thu-o-2-b</td>
<td>Physical and Statistical Approaches Bridging the Gap</td>
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<td>14:30-14:50</td>
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<td>SIMULTANEOUS CO2 AND AEROSOL RETRIEVAL IN A VEGETATION FIRE</td>
<td>Adrien Deschamps, Rodolphe Marion, Xavier Briottet, Pierre-Yves Foucher</td>
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<td>PLUME USING AVIRIS HYPERSPECTRAL DATA</td>
<td>and Claire Lavigne</td>
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<td>14:50-15:10</td>
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<td>ENDMEMBER-BASED CONTEXTUAL LEARNING FOR ANOMALY</td>
<td>Christopher R. Ratto, Kenneth D. Morton, Leslie M. Collins and Peter A.Torrione</td>
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<td>CLASSIFICATION IN HYPERSPECTRAL DATA</td>
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<td>15:10-15:30</td>
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<td>VALIDATION OF PHYSICAL UNMIXING MODEL IN THE RADIATIVE DOMAIN</td>
<td>Michal Shimoni, Xavier Briottet, Christiaan Perneel, Bernard Tanguy,</td>
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<td>Yves-Michel Frederic and Eyal Ben-Dor</td>
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<td>15:30-15:50</td>
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<td>PHYSICAL MODELLING AND NON-LINEAR UNMIXING METHOD FOR URBAN</td>
<td>Ines Meganem, Philippe DEliot, Xavier Briottet, Yannick Deville and</td>
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<td>HYPERSONICAL IMAGES</td>
<td>Shahram Hosseini</td>
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15:50-16:10 MAPPING INTIMATE MIXTURES USING AN ADAPTIVE KERNEL-BASED TECHNIQUE
Joshua Broadwater and Amit Banerjee

16:10 - 16:40 Coffee break

16:40 - 18:20 Session thu-o-3-a
Hyperspectral methods for difficult target detection (2)
Session Chairs: James Theiler, Los Alamos National Laboratory, USA
                Jenny Du, Mississippi State University, USA

16:40-17:00 MIN-MAX DETECTION FUSION FOR HYPERSPECTRAL IMAGES
Peter Bajorski

17:00-17:20 A KURTOSIS-BASED TEST TO EFFICIENTLY DETECT TARGETS PLACED IN CLOSE
PROXIMITY BY MEANS OF LOCAL COVARIANCE-BASED HYPERSPECTRAL
ANOMALY DETECTORS
Stefania Matteoli, Marco Diani and Giovanni Corsini

17:20-17:40 DETECTION OF VEHICLES IN SHADOW AREAS
Michal Shimoni, Gustav Tolt, Jorgen Ahlberg and Christiaan Perneel

17:40-18:00 A DETECTION-IDENTIFICATION PROCESS WITH GEOMETRIC TARGET
DETECTION AND SUBPIXEL SPECTRAL VISUALIZATION
William Basener, Ariel Schlamm, David Messinger and Emmett Lentilucci

18:00-18:20 RANDOM PROJECTION AS DIMENSIONALITY REDUCTION AND ITS EFFECT
ON CLASSICAL TARGET RECOGNITION AND ANOMALY DETECTION TECHNIQUES
Yi Chen, Nasser Nasrabadi and Trac Tan

Session thu-o-3-b
Unmixing and dimension reduction
Session Chairs: Emmett Lentilucci, Rochester Institute of Technology, USA
                Paul Scheunders, University of Antwerp, Belgium

16:40-17:00 APPLICABILITY OF ROBUST UNCONSTRAINED LINEAR UNMIXING (RULU) TO
ENDMEMBER EXTRACTION TECHNIQUES
Olga Duran and Maria Petrou

17:00-17:20 CONCURRENT SPATIAL-SPECTRAL BAND GROUPING: PROVIDING A SPATIAL
CONTEXT FOR SPECTRAL DIMENSIONALITY REDUCTION
Matthew Lee, Lori Bruce and Saurabh Prasad

17:20-17:40 ROBUST HYPERSPECTRAL SIGNAL SUBSPACE IDENTIFICATION IN THE
PRESENCE OF SIGNAL DEPENDENT NOISE
Nicola Acito, Marco Diani and Giovanni Corsini

17:40-18:00 STUDY ON THE ISSUE OF NOISE ESTIMATION IN DIMENSION REDUCTION OF
HYPERSPECTRAL IMAGES
Lianru Gao, Bing Zhang, Zhengchao Chen and Liping Lei

18:00-18:20 ROBUST ENDMEMBER EXTRACTION USING WORST-CASE SIMPLEX VOLUME
MAXIMIZATION
Tsung-Han Chan, Wing-Kin Ma, Arulmurugan Ambikapathi and Chong-Yung Chi

Additional Papers

EXTRACTING SPATIALLY AND SPECTRALLY COHERENT REGIONS FROM IMAGES
Farhana Bandukwala