

MULTITEMP 2015



Annecy, France
July 22-24 2015

MultiTemp 2015 - Opening Session

10:00 WELCOME FROM THE HOST INSTITUTION

Laurent Foulloy, Polytech Annecy Chambéry - University Savoie Mont Blanc, France

10:10 COPERNICUS - AN OPERATIONAL LONG-TERM EUROPEAN EARTH OBSERVATION SYSTEM

Simon Jutz, ESA, Italy

10:40 SENTINEL-2: OPPORTUNITIES AND CHALLENGES FOR RESEARCH AND APPLICATIONS

Gérard Dedieu, CNES / CESBIO, France

11:10 THE TIME VARIABLE IN REMOTE SENSING: PAST, PRESENT AND FUTURE CHALLENGES

Lorenzo Bruzzone, University of Trento, Italy

11:40 OVERVIEW OF THE CONFERENCE AND TECHNICAL PROGRAM

Gregoire Mercier, Telecom Bretagne, France

Emmanuel Trouvé, University Savoie Mont Blanc, France

Geneva



MULTITEMP 2015

Mont-Blanc



Annecy



**8th International Workshop on
the Analysis of Multitemporal
Remote Sensing Image**

Chambéry



8th International Workshop on the Analysis of Multitemporal Remote Sensing Images

- 148 registrations from 6 continents!





**Anncy-le-Vieux
Campus**



8th International Workshop on the Analysis of Multitemporal Remote Sensing Images

- Technical Sponsors



- Sponsors



8th International Workshop on the Analysis of Multitemporal Remote Sensing Images

Scientific Committee

- Jon Atli Benediktsson, University of Iceland, Iceland
- Francesca Bovolo, Fondazione Bruno Kessler, Italy
- Gustavo Camps-Valls, University of Valencia, Spain
- Jocelyn Chanussot, INP Grenoble, France
- Mauro Dalla Mura, INP Grenoble, France
- Begum Demir, University of Trento, Italy
- Peijun Du, China University of Mining and Technology, China
- Michael Eineder, DLR, Germany
- Mathieu Fauvel, University of Toulouse, France
- Laurent Ferro-Famil, University of Rennes, France
- Pierre-Louis Frison, Université de Marne la vallée
- Michael Förster, Technical University of Berlin, Germany
- David Goodenough, Natural Resources Canada, Canada
- Noel Gourmelen, University of Edinburgh, UK
- Olivier Hagolle, CNES, France
- Mryka Hall-Beyer, University of Calgary, Canada
- Jordi Inglada, CNES, France
- Greg McDermid, University of Calgary, Canada
- Gabriele Moser, University of Genoa, Italy
- Allan Nielsen, Technical University of Denmark, Denmark
- Claudia Notarnicola, EURAC, Italy
- Frank Paul, University of Zurich, Switzerland
- Virginie Pinel, ISTerre, University Savoie Mont-Blanc, France
- Aluisio Pinheiro, University of Campinas, Brazil
- Olivier Talagrand, Ecole Normale Supérieure, France
- Florence Tupin, Télécom ParisTech, France
- Ranga Raju Vatsavai, North Carolina State University, USA
- Niko Verhoest, Ghent University, Belgium
- Hervé Yesou, University of Strasbourg, France
- Nicholas Younan, Mississippi State University, USA

General Chair

- Emmanuel Trouvé, University Savoie Mont Blanc, France

Technical Chair

- Grégoire Mercier, Télécom Bretagne, France

Permanent Steering Committee

- Lorenzo Bruzzone, University of Trento, Italy
- Pol Coppin, Katholieke Universiteit Leuven, Belgium
- Ross S. Lunetta, U.S. Env. Protection Agency, USA
- Roger King, Mississippi State University, USA

Organizing Committee: LISTIC, University Savoie Mont Blanc

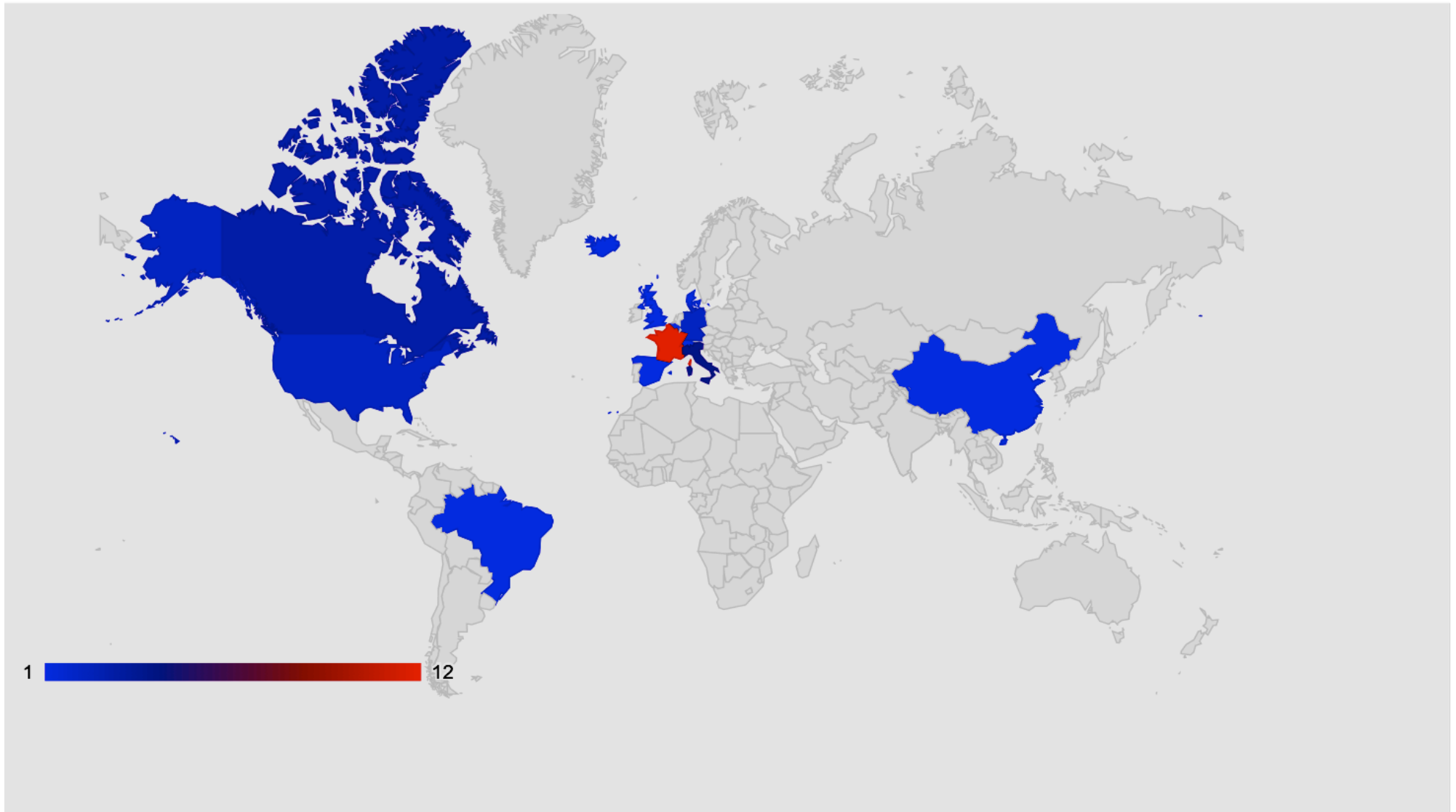
- Abdourrahmane Atto,
- Alexandre Benoit,
- Philippe Bolon,
- Amaury Dehecq,
- Françoise Deloule,
- Guillaume Ginolhac,
- Haixing He,
- Thu Trang Le,
- Nicolas Méger,
- Flavien Vernier,
- Yajing Yan



LISTIC

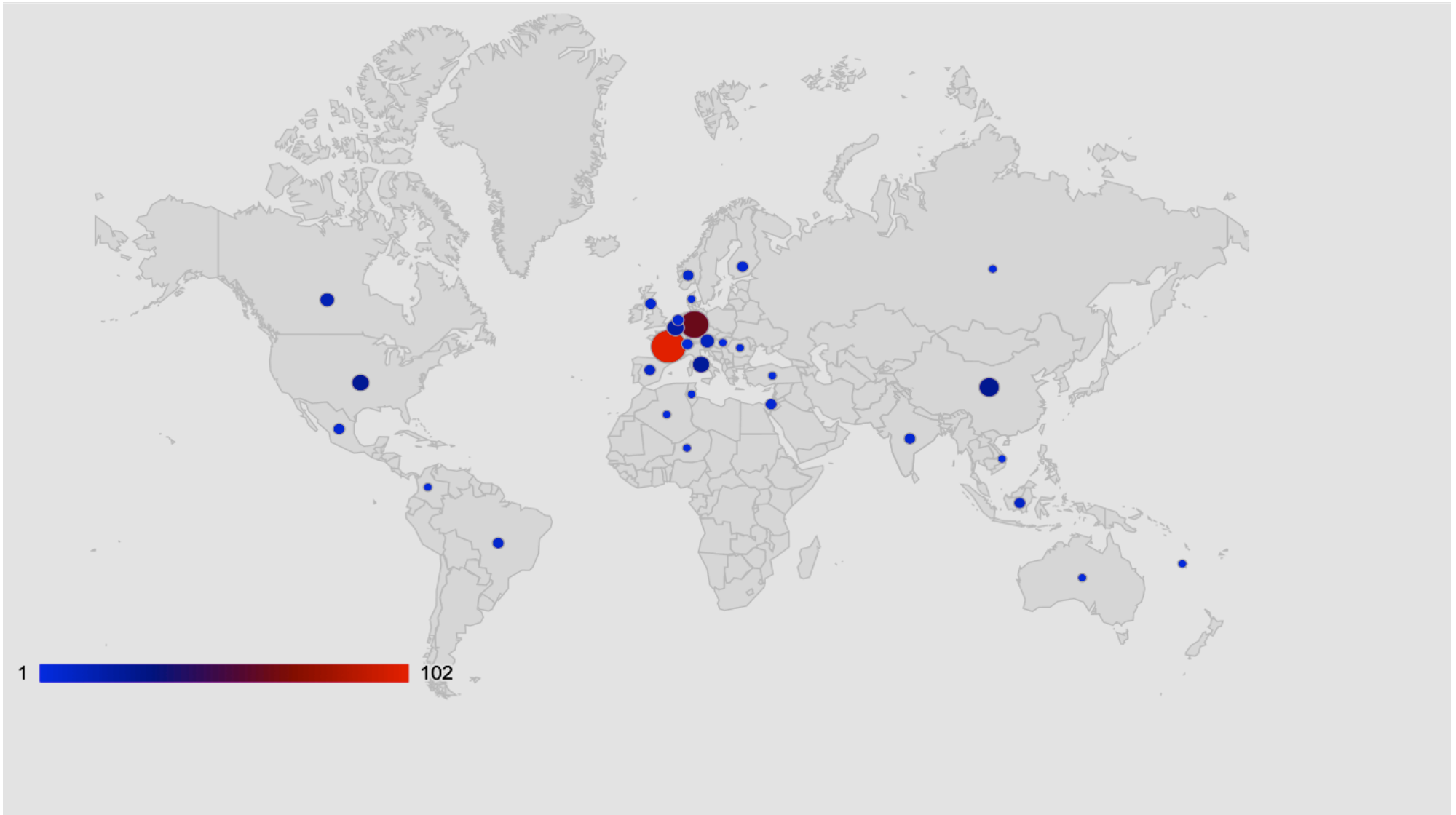
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Scientific Committee World Map



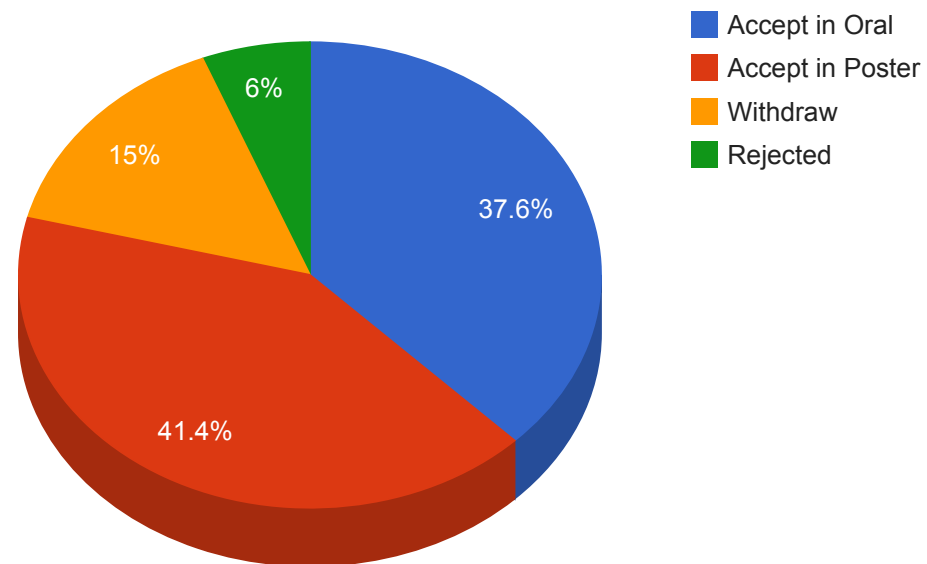
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Paper Submission World Map



8th International Workshop on the Analysis of Multitemporal Remote Sensing Images

Paper Selection (out of 133 submissions)



8th International Workshop on the Analysis of Multitemporal Remote Sensing Images


Poster sessions

- Best paper award

Vote for the best poster (up to 3 choices max.)

To win: a free ENVI licence





MULTITEMP 2015

Best poster award

Choose your preferred poster(s) from this list and put this bulletin in the ballot-box room (maximum of 3 votes)

Session 2A: Change Detection Techniques Poster Session

- Safa Rejichi and Ferdaous Chaabane. SATELLITE IMAGE TIME SERIES CLASSIFICATION AND ANALYSIS USING AN ADAPTED GRAPH LABELING
- Xiaojing Huang, Wen Yang, Gui-Song Xia and Mingsheng Liao. SUPERPIXEL-GUIDED CHANGE DETECTION IN HIGH RESOLUTION SAR IMAGES BASED ON MULTI-SCALE REGION COVARIANCE
- Mehdi Hedir and Haddad Boualem. Ground Echoes filtering Using Completed Local Binary Pattern and The Support Vector Machine
- Kun Tan, Xiao Jin, Antonio Plaza and Peijun Du. Automatic change detection in high-resolution remote sensing images by using a multiple classifier system and spatial features

Session 2B: Data reconstruction and inter-calibration Poster Session

- Ruth Sonnenschein, Ruben Remelgado and Ion Sola. THE EFFECT OF PREPROCESSING STRATEGY ON REGIONAL LAND COVER MAPPING USING MULTITEMPORAL IMAGE MOSAICS
- Guoming Gao, Huan Liu, Yanfeng Gu and Xiaping Jia. NORMALIZED DIFFERENCE PHYTOPLANKTON INDEX (NDPI) AND SPATIO-TEMPORAL CLOUD FILTERING FOR MULTITEMPORAL CYANOBACTERIA POLLUTION ANALYSIS ON ERIE LAKE IN 2014
- Alejandra A. Lopez-Cabeza. Impainting restoration for Inland Waters Mexico Ecosystems. Lake Chapala, Lake Patzcuaro and Lake Cutzuba
- Daniel Kristof. An alternative representation of coarse-resolution remote sensing images for time-series processing
- Yves Julien and Jose Sobrino. CLOUDSIM: A FAIR BENCHMARK FOR COMPARISON OF METHODS FOR TIMES SERIES RECONSTRUCTION FROM CLOUD AND ATMOSPHERIC CONTAMINATION

Session 2C: Long / Dense time series Poster Session

- Benjamin Jakimow, Hannes Müller, Patrick Griffiths and Patrick Hostert. Exploring dense Landsat time series to monitor pasture management in the Brazilian Amazon
- Yady Tatiana Solano Correa, Edgar Leonairo Pencuc Fierro and Apolinar Figueroa Casas. DETERMINING THE EFFECTS OF ENSO PHENOMENA ON ANDEAN AREAS BY APPLYING RADIO-METRIC INDICES ON LONG TIME SERIES
- Rinny Rahmania, Christophe Proisy, Gaëlle Viennois, Ariani Andayani, Frida Sidik, Aulia Riza Farhan, Niken Financia Gusmawati, Juliana Prospero, Olivier Germain, Hugues Lemonnier, Berni Subki, Suhardjono, Nuryani Widagti and Philippe Gaspar. 13 YEARS OF CHANGES IN THE EXTENT AND PHYSIOGNOMY OF MANGROVES AFTER SHRIMP FARMING ABANDONMENT, BALI, INDONESIA
- David Frantz, Marion Stellmes, Achim Röder, Thomas Udelhoven, Sebastian Mader and Joachim Hill. Reconstruction of MODIS derived phenology metrics at Landsat spatial resolution
- He Yin, Asia Khamzina and Christopher Martius. Forest cover change between 2000 and 2014 in Central Asia
- Louise Leroux, Christian Baron, Seydou B Traoré, Danny Lo Seen and Agnès Bégué. TESTING SATELLITE RAINFALL ESTIMATES FOR YIELD SIMULATION OF A RAINFED CEREAL IN WEST AFRICA
- Oliver Cartus, M Santoro and J M Kellndorfer. Update of the National Biomass and Carbon Dataset 2000 using ALOS PALSAR L-band
- Marie Julie Lambert, François Waldner and Pierre Defourny. Mapping annual cropland at 100 m over Sahelian and Sudanian agrosystems: a knowledge-based data driven approach using 100 m PROBA-V time series

Session 2D: Time series monitoring Poster Session

- Anne Jacquin, Michel Goulard, Shawn Hutchinson and Stacy Hutchinson. A statistical approach for predicting grassland degradation in disturbance-driven landscapes
- Emil Cherrington, Nicolas Barbier, Gregoire Vincent, Daniel Sabatier and Raphaël Pélissier. Use of MODIS and SPOT Vegetation time-series data for monitoring phenological variation in tropical forest ecosystems in Western Africa and the Guiana Shield
- Yue Qi and Shibo Fang. A method to measure the water supplying capacity of soil in Southwest China by using Multi-source Vegetation Index and Drought index
- Yu Weiguang, Fang Shibo and Qi Yue. Monitoring Winter Wheat Phenology with HJ multi-temporal Data and studying the relationship between LAI and NDTI, EVI, SWAI in North China Plain
- Xiuxen Liu, Atharva Sharma, Xiaojun Yang and Nigel Nye. A Scalable Spatiotemporal Inference Framework Based on Statistical Shape Analysis for Natural Ecosystem Monitoring by Remote Sensing
- Amon Karnieli, Zhihao Qin, Bo Wu, Natalya Panov and Feng Yan. APPLYING THE CHANGE VECTOR ANALYSIS TECHNIQUE FOR ASSESSING SPATIO-TEMPORAL DYNAMICS OF LAND-USE AND LAND-COVER IN THE MU US SANDY LAND, CHINA
- José Miguel Barrios, Nicolas Ghilain, Alirio Arboleda and Françoise Meulenberghs. Retrieving daily evapotranspiration from the combination of geostationary and polar-orbit satellite data

8th International Workshop on the Analysis of Multitemporal Remote Sensing Images

Workshop Topics

- Multitemporal image analysis techniques
- Classification of multitemporal data
- Data mining and analysis of remote sensing time series
- Change detection methods
- Change detection validation and accuracy assessment
- Multitemporal SAR and InSAR data analysis
- Multitemporal LiDAR data analysis
- Timelaps and multitemporal photogrammetric data analysis
- Image registration, calibration and correction techniques
- Land-cover and land-use monitoring
- Phenology product development and monitoring applications
- Sea-ice dynamics and cryospheric monitoring and modeling
- Water and ecosystem resources monitoring and modeling
- Environmental reclamation monitoring and modeling
- Drought monitoring and predictive modeling
- Vegetation dynamics and productivity
- Forestry and agriculture monitoring
- stress and damage assessment
- New satellite missions for high temporal resolution time series
- New satellite missions for very high spatial resolution time series

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Special sessions



Take 5 / SPOT 4-5
Olivier Hagolle,
CNES/CESBIO, France

InSAR and ground deformation monitoring
Michael Eineder,
*Remote Sensing Technology Institute,
DLR, Germany*



Urban analysis and monitoring
Florence Tupin,
Télécom ParisTech, France



Cryosphere and global change
Frank Paul, *University of Zurich,
Switzerland*



Data Mining
Ranga Raju Vatsavai,
*North Carolina State University,
and Oak Ridge National Laboratory,
USA*

Inverse Problems and Data Assimilation
Olivier Talagrand,
*Laboratoire de Météorologie Dynamique,
IPSL, École Normale Supérieure,
Paris, France*



Multisource data for ecosystem monitoring
Michael Förster, *Technische Universität Berlin,
Geoinformation in Environmental Planning Lab,
Germany*



Disaster Assessment
Stéphane May, *CNES, France*

JSTARS Special Issue

IEEE STARS
Special issue on
“Analysis of multitemporal data and applications”

Important Dates:

- Sept, 30th 2015: Full paper submission deadline
- May 2016: Publication date

<http://mc.manuscriptcentral.com/jstars>

Call for papers

IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing

Special issue on

“Analysis of multitemporal data and applications”

After 40 years of Earth Observation missions with both passive (multispectral, hyperspectral, etc.) and active (synthetic aperture radar, lidar, etc.) sensors, remote sensing data offer a unique opportunity to record, to analyze and to predict the evolution of our living planet.

In the last decade, a large number of new satellite remote sensing missions have been launched, resulting in dramatic improvement in the image acquisition capabilities. The Landsat open archives program, the successful launching of the Sentinel-1 in 2014 and the launching of the coming satellites of the Copernicus program, with regular acquisition plans and free data access policy, result in new challenges for handling and processing such huge volume of data. This increasing number of Earth Observation systems involves an enhanced possibility to acquire multitemporal images of the Earth surface, with improved temporal and spatial resolution. Such new scenario increases significantly the interest of the time series processing in the remote sensing community. The development of novel data processing techniques to address new important and challenging applications is promising.

This special issue will focus on all the issues related to multitemporal data processing, to the analysis of time series acquired by passive or active sensors and to the related applications, including:

- Multitemporal image analysis techniques
- Image registration, calibration and correction techniques
- Classification of multitemporal data
- Fusion and assimilation of multitemporal data
- Data mining and analysis of remote sensing time series
- Change detection methods
- Change detection accuracy assessment
- Multitemporal SAR and InSAR data analysis
- Multitemporal LiDAR data analysis
- Timelaps and multitemporal photogrammetric data analysis • Land-cover and land-use dynamics
- Phenology product development and monitoring applications • Applications of multitemporal data and time series
- Sea-ice dynamics and cryospheric monitoring and modeling • Ocean dynamics, modelling and prediction
- Water and ecosystem resources monitoring and modeling • Environmental reclamation monitoring and modeling
- Drought monitoring and predictive modeling
- Vegetation dynamics and productivity
- Forestry and agriculture monitoring
- Stress and damage assessment
- New satellite missions for high temporal resolution time series
- New satellite missions for high spatial resolution time series

Format and preliminary schedule

All submissions will be peer reviewed according to the IEEE Geoscience and Remote Sensing Society guidelines. Submitted articles should not have been published or be under review elsewhere. Submit your manuscript on <http://mc.manuscriptcentral.com/jstars> using the Manuscript Central interface and select the “multitemporal_remote_sensing” special issue manuscript type. Prospective authors should consult the website www.grss-ieee.org/publications/jstars/ for guidelines and information on paper submission. Please note that IEEE JSTARS applies a mandatory page over length charge of \$200 per page (beginning with page 7 and beyond).

Important Dates

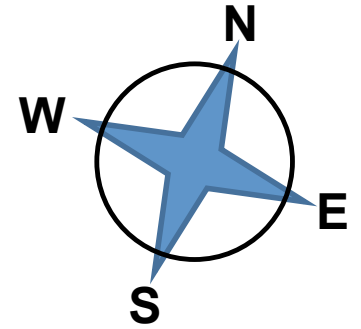
- Full paper submission deadline: September, 30 2015.
- Expected publication date: May, 2016.

Guest editors




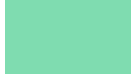

- Grégoire Mercier, Télécom Bretagne, France, gregoire.mercier@telecom-bretagne.eu
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- Lorenzo Bruzzone, University of Trento, Italy, bruzzone@ing.unitn.it
- Yifang Ban, KTH Royal Institute of Technology, Sweden, yifang.ban@abe.kth.se



Wednesday, July 22 nd		Thursday, July 23 rd		Friday, July 24 th		
8:40	Registration opening	8:40	Session 5A (B120) Cryosphere and global change Special Session	Session 5B (B014) Urban analysis and monitoring Special Session	8:40	Session 9 (B014) Image Processing Methods
9:00	Welcome Coffee	10:50	Coffee Break		10:00	Coffee Break
10:00	Session 1 (B014) Opening session	11:00	Session 6 (1 st floor) Poster session		10:30	Session 10 (B014) Forest analysis and monitoring
12:00	Lunch	12:30	Lunch		12:30	Lunch
13:00	Session 2 (1 st floor) Poster session 	13:30	Session 7A (B120) Inverse Problems and Data Assimilation Special Session	Session 7B (B014) Data mining Special Session	14:00	Session 11 (B014) SAR Processing Methods
14:30	Session 3A (B120) Take 5 / SPOT 4-5 Special Session	15:20	Coffee Break		16:00	IGARSS Connection → Direct Bus to Chambéry Train Station
14:20		15:50	Session 8A (B120) Disaster Assessment Special Session	Session 8B (B014) Multisource data for ecosystem monitoring Special Session	 <p>Buy train tickets in advance</p>	
15:40	Coffee Break					
16:00	Session 4A (B120) Long Time series	Session 4B (B014) Atmosphere artefacts and radiometry				
18:45	Welcome Evening Reception - Ancey City Hall (Mairie d'Ancey - Quai Eustache Chapuis)					
20:00	Dinner cruise on Ancey lake Boarding: Quai Napoléon III, Ancey					



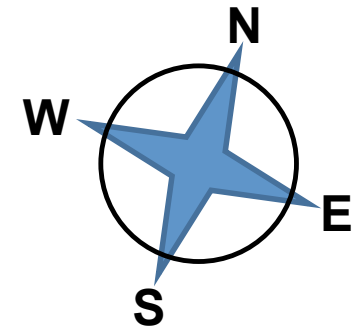
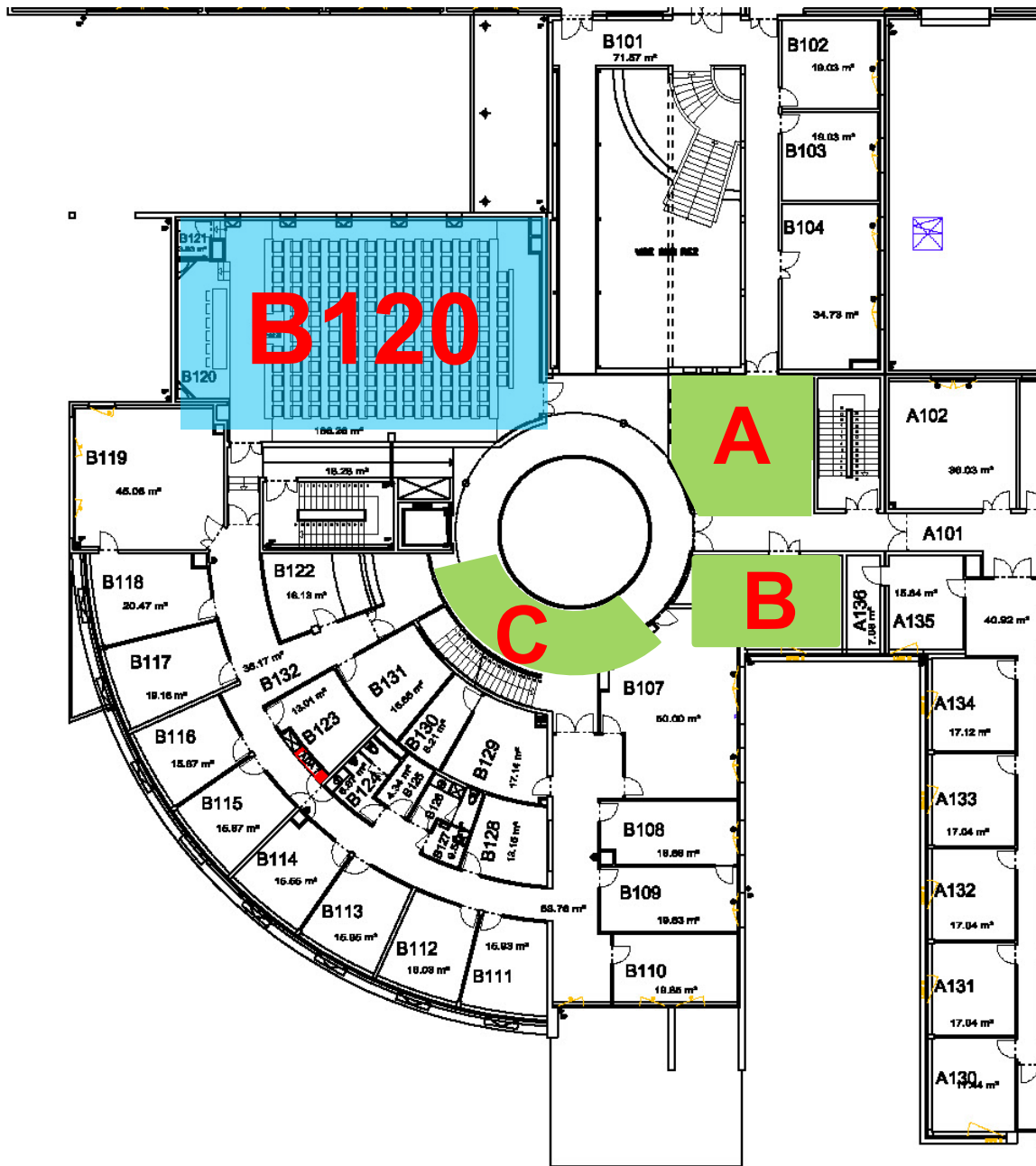
Polytech Ground floor

-  Entrance
-  Registration
-  Amphitheater
-  Speaker room
-  Coffee, lunch

Bus stop

5 Chemin de Bellevue, Annecy-le-Vieux

Bus stop (arrival)



Polytech First floor

- Amphitheater
- Poster area

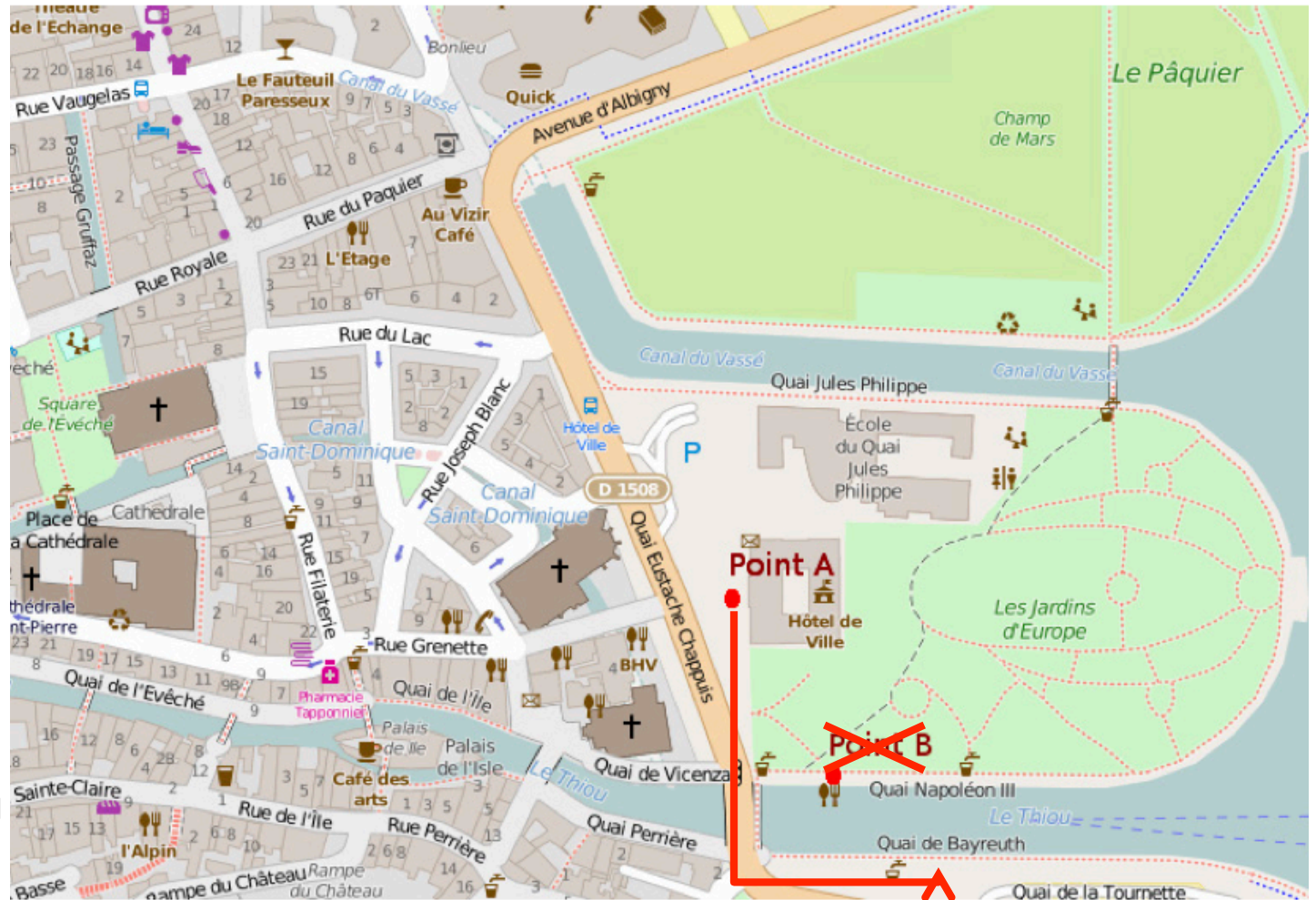
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Social Events Wednesday 22

Welcome Evening Reception
6:45 PM (Point A)
at “Ancey City Hall”
(Mairie d’Ancey)

Social Dinner
8 PM (Point B)
Dinner cruise on Ancey lake

Boarding from: 8.00 PM
Boat departure: 8:30 PM
Boat return: 10:30 PM
Dancing on board → 00:30 AM



8 PM - Quai de Bayreuth



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