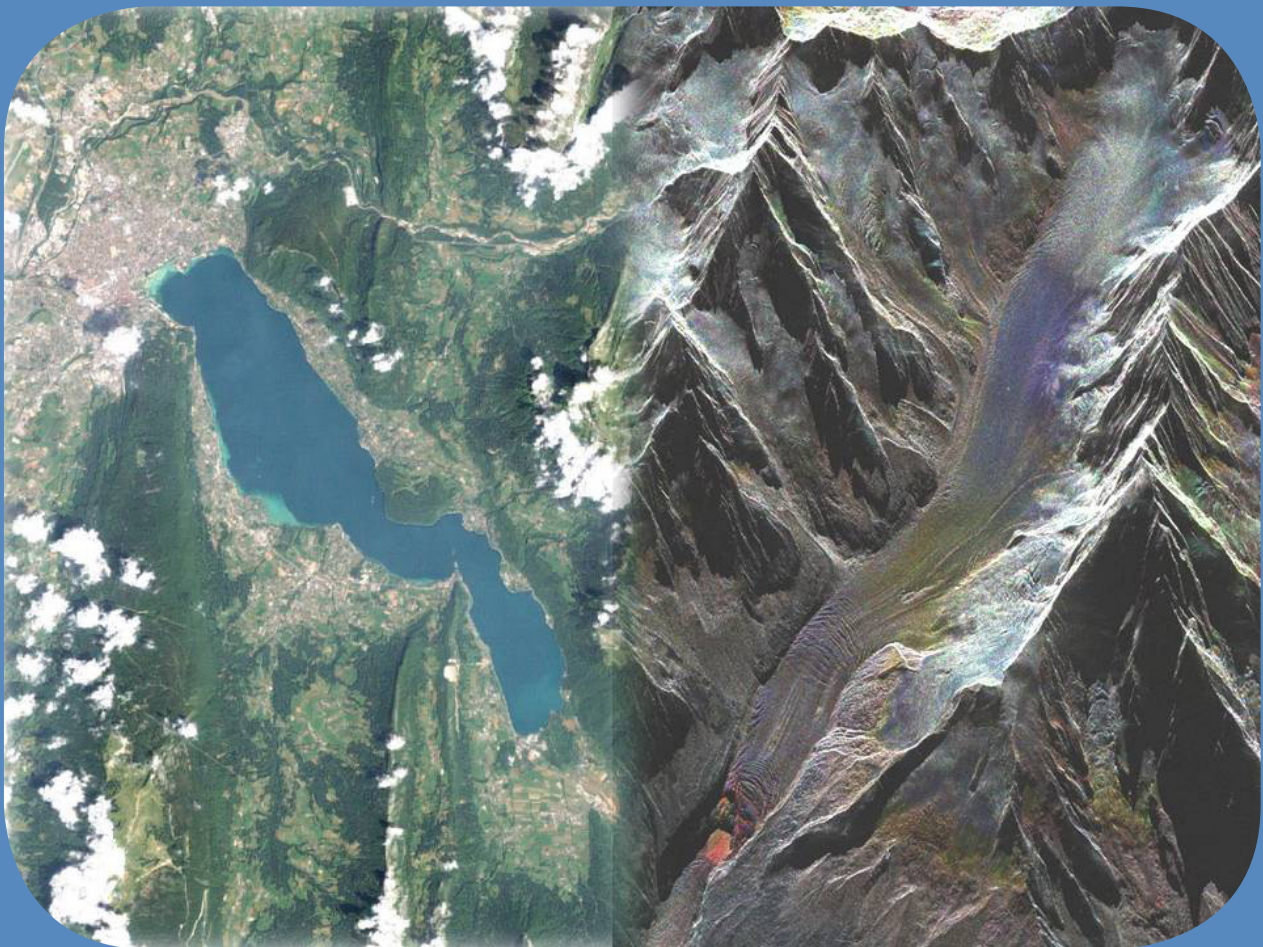


MULTITEMP 2015

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

22-24 July 2015, Annecy, France

Workshop Program



MULTITEMP 2015

22-24 July
Annecy, France

1. FOREWORD

On behalf of the Organizing Committee, it is a great pleasure to welcome you to this 8th edition of MultiTemp. We are delighted to meet you here. Annecy and University Savoie Mont Blanc are proud to host this international workshop.

This year, we have received a remarkable number of submissions with 130 papers from 32 countries. We wish to thank warmly all the referees of the Scientific Committee for their incredible work done in reviewing and assembling an exciting technical program.

For this 8th edition, we focussed on the enlargement of the methodology and application domains covered by MultiTemp workshops. Specific domains where multitemporal information is crucial have been highlighted by offering 8 special sessions : SPOT 4-5 Take 5, InSAR and Ground Deformation Monitoring, Cryosphere and Global Change, Urban Analysis and Monitoring, Inverse Problems and Data Assimilation, Disaster Assessment, and Multisource Data for Ecosystem Monitoring. An introductory talk will be given by a distinguished keynote speaker at the beginning of each special session. An overview of challenges and recent advances will be given in each domain. We would like to thank particularly these keynote speakers for their support: Olivier Hagolle (CNES-CESBIO, France), Michael Eineder (DLR, Germany), Frank Paul (University of Zurich, Switzerland), Florence Tupin (Telecom ParisTech, France), Olivier Talagrand (CNRS LMD, France), Raju Vatsavai (Carolina State University, USA), Stéphane May (CNES, France) and Michael Foerster (Technische Universitaet Berlin, Germany).

In order to foster discussions and exchanges between attendees, MultiTemp 2015 also organises poster sessions (more than half of the papers). We believe that it will contribute to the success of the workshop.

Outside the conference, we hope you will enjoy the beauty of the city of Annecy : its lake, its mountains and numerous local attractions.

Finally, we would like to express our gratefulness to the European and French Space Agencies and to the Steering Committee, particularly Dr. Simon Jutz (ESA, Italy), Dr. Gérard Dedieu (CNES, France) and Pr. Lorenzo Bruzzone (University of Trento, Italy), for their support and availability.

Welcome again to Annecy and we wish you a rich and inspiring MultiTemp 2015 !

Gregoire Mercier

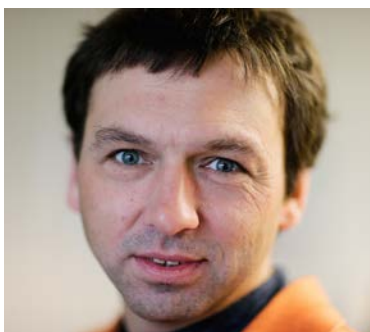
Télécom Bretagne, France

Technical Chair

Emmanuel Trouvé

University Savoie Mont Blanc

General Chair



On behalf of the IEEE Geoscience and Remote Sensing Society, I would like to welcome you to the 8th International Workshop on the Analysis of Multitemporal Remote Sensing Images in the beautiful city of Annecy, France. Multitemp has become a premier workshop on multitemporal remote sensing with participants coming from all over the world to share and exchange the knowhow and analysis techniques using wide range of remote sensing data for many applications. It is my belief that with ever growing population and ever increasing demand for resources, public services, security, etc., the interdisciplinary field of remote sensing will definitely be among the top 10 most promising technology trends in the future. It is our mandate to advance the frontiers of remote sensing science and technology and continue the tradition of providing service to our societies at large and improving the life on this planet. The topic of multitemporal remote sensing is among the very challenging and important disciplines in remote sensing. Assessing, monitoring and predicting the dynamics of terrestrial processes (temporal variations of land cover, deforestation, erosion, landslides, flood, snow and ice cover, etc.) is of paramount importance for our planet and its habitants. As a co-sponsor of Multitemporal Workshop, the IEEE GRSS leadership believes the diversity of participants that includes a mixture of scientists and students from academia, practitioners, and decision makers together with the diversity of research topics covered in 2015 Multitemporal Workshop provides the right forum to tackle such challenging problems.



I am grateful to the organizing team, led by the General Chair Prof. Emmanuel Trouvé and the Technical Chair Prof. Grégoire Mercier, for their hard work and dedication to ensure a successful MultiTemp. Thanks to the organizing team, the dinner cruise on Annecy Lake will be an incredible moment, that definitively makes MultiTemp 2015 an event to be remembered.

I would like to wish you all a very successful meeting and hope to see many of you at IGARSS 2015 in Milan, Italy.

Kamal Sarabandi

2015 IEEE Geoscience and Remote Sensing President



2. HOST INSTITUTION



University Savoie Mont Blanc (USMB) is the host institution for MultiTemp 2015. With 14 000 students, a rich variety of multidisciplinary training offers and 19 research laboratories, *University Savoie Mont Blanc* is an establishment of higher education and multidisciplinary research, which associates with its proximity and opens to the whole world. It offers general and special bachelor's degrees, masters degrees, engineering diplomas and doctor's degrees. On its three campus at Anancy-le-Vieux, Le Bourget-du-Lac and Jacob-Bellecombette, it provides particularly attractive living and studying conditions, in the heart of an exceptional region, between lakes and mountains.

The conference takes place on the Anancy-le-Vieux Campus in the graduate engineering school **Polytech Anancy-Chambéry**. With 800 students, 3500 alumni. Polytech Anancy-Chambéry proposes 4 engineering diplomas and includes 3 research laboratories with 100 permanent staff and 80 PhD students. The conference is organized by the **LISTIC research Laboratory** (*Laboratoire d'Informatique Systèmes, Traitement de l'Information et de la Connaissance - Laboratory for computer sciences, systems, information and knowledge*) which gathers about 40 researchers and 20 PhD students. Image processing and information fusion methods, with strong activities on remote sensing issues (SAR image analysis, data mining, surface displacement measurement...), have been developed since more than 10 years in LISTIC.

Research at University Savoie Mont Blanc - <http://www.univ-smb.fr>

The research at *University Savoie Mont Blanc* is organized into separated nationally recognized sections. These different sections work in close collaboration with the major national and international research organizations such as *CNRS (National Center for Scientific Research)*, *CEA (Alternative Energies and Atomic Energy Commission)*, *INRA (National Institute for Agricultural Research)*, *IRSTEA (National Research Institute of Science and Technology for Environment and Agriculture)*, *IFSTTAR (French Institute of Science and Technology for Transport, Spatial Planning, Development and Networks)* and *CERN (European Organization for Nuclear Research)*. They are also closely linked to more specific structures such as *INES (National Institute of Solar Energy)* of which organization the university is a founding member. Our researchers are very involved in areas related with the dynamics of regional and local concerns: mountains and tourism, energy and environment, mechatronics, imaging and organizational structures. They contribute to the visibility of the university in areas where we have gained international reputation. Every year several researchers are admitted to the *French University Institute*, receive *CNRS* medals or other distinguished prizes. Being oriented towards the whole world, and often recognized for its distinguished record in international relations, the university takes advantage of its geographic location to establish collaborative links with Universities of Turin, Eastern Piedmont, Lausanne and Geneva and *HES-SO (University of Applied Sciences Western Switzerland)*, as well as with its partnerships : universities of Grenoble, Lyon and Saint-Etienne.

Polytech Anancy-Chambéry graduate engineering school - <http://www.polytech.univ-smb.fr>

Polytech Anancy-Chambéry is authorized by the Engineering Qualifications Commission to award engineering diplomas in four fields: "Electrical Engineering and Computer Science", "Mechanical Engineering and Material Science", "Environmental Science, Civil Engineering and Energy", "Mechanical and Industrial Engineering"

Polytech Anancy-Chambéry belongs to both University Savoie Mont Blanc and the Polytech Network. Double guarantee thus exists for students who benefit from both training for high level research from university and Polytech engineering diploma.

With its three key themes – mechatronics, renewable energy, intelligent systems – benefiting from three research labs – Mechatronics and Materials (SYMME), Knowledge and Information Processing (LISTIC), Civil Engineering and Energy (LOCIE) – the engineering school has been involved in numerous innovative projects alongside the Mont-Blanc Industry, Imaginove and Tenerrdis business clusters, the INES (National Solar Energy Institute), the Maison de la Mécatronique, the CEA (French Alternative Energy and Atomic Energy Commission), the CETIM (National Technical Center for Mechanical Industries), the ADEME (Environment and Energy Management National Agency) and the CTDEC (Technical Center for Screw-Machining Industry).



3. SPONSORS



Founded in 1961, the Centre National d'Études Spatiales (CNES) is the government agency responsible for shaping and implementing France's space policy in Europe. Its task is to invent the space systems of the future, bring space technologies to maturity and guarantee France's independent access to space. CNES is a pivotal player in Europe's space programme, and a major source of initiatives and proposals that aim to maintain France and Europe's competitive edge. It conceives and executes space programmes with its partners in the scientific community and industry, and is closely involved in many international cooperation programmes—the key to any far-reaching space policy. The agency's more than 2,400-strong workforce constitutes an exceptional pool of talent, with some 1,800 engineers and executives, 35% of whom are women. Through its ability to innovate and its forward-looking vision, CNES is helping to foster new technologies that will benefit society as a whole, focusing on : Ariane, Sciences, Observation Telecommunications and Defence.

The CNES Communities of Technical Skills (CCT) organize until 60 free workshops/ year gathering more than 3000 experts around innovative technological or methodological subjects or to share know-how and experience feedback. Organized under 17 skills such materials, operations, Network Computing or environment, CCT have for main objectives:

- to make known and recognize the technical expertise of workshop contributors and to increase their own skills by exchange on innovative techniques and methods,
- to share know-how and practice between the space sector and the other business sectors allowing partnerships,
- to contribute to CNES technical policy, including R&D and PhD proposals.

<http://cct.cnes.fr>



The labSTICC (i.e. laboratory dedicated to science and technique in information, communication and knowledge) is a research laboratory that includes several research teams from Telecom Bretagne, University of Occidental Brittany and University of South Brittany in Brest, France. It holds more that 300 people dedicated to the motto: "from sensor to knowledge".

The teams are clustered into three departments (MOM, CACS and CID) devoted to microwave and materials, communications & circuits design, and knowledge information decision. This last department is mainly concerned by the domains of GMES, data mining, decision aid as well as man-machine interactions. It promotes trans-disciplinary research axes and programs in order to support and develop a system-level approach.

Its strategic positioning is on first and simplified approach divided in two main domains:

- Applications: a very solid anchoring for insuring a long-term presence on many society topics: environmental protection, risk assessment, natural or man-made disaster, expertise on the maritime domain (halieutic resources, underwater activities, satellite observations, ...), and so on.
- Methods: our researchers are on top of the development of new processing tools based on advance methods directly tailored to the above applications. Some of the prospective fields are:
 - o Veryhighresolutionprocessing(Spatialresolution:sonar,radar,optics;Spectralresolution:hyperspectralimaging;Temporal resolution: change detection, time series analysis; Modal résolution: multi sensors fusion, multi modalities processing).
 - o Innovative sensors and sensor networks (Drones: surface and underwater; Integrated systems for environmental observations; Passive systems, stealth).

<http://www.labsticc.fr>



The DYNAFOR lab works to face current challenges brought by global changes in rural and forest areas on climate, land use, biodiversity and human activities. Within the unit, several disciplines and expertise are needed to develop such research. It includes biotechnical disciplines such as agronomy, animal science, or forestry; disciplines from ecology such as landscape ecology, forest ecology and entomology; and expertise in the field of multi-agent modeling, the use of nonlinear data analysis such as kernel methods, remotely sensed image processing techniques and management and cross spatial data in GIS.

<https://dynafor.toulouse.inra.fr>



THE COPERNICUS PROGRAMME

Copernicus is the most ambitious, most comprehensive Earth observation system world-wide. It aims at giving decision-makers better information to act upon, at global, continental, national and regional level.

The European Union (EU) leads the overall programme, while the European Space Agency (ESA) coordinates the space component. Similar to meteorology, satellite data is combined with data from airborne and ground sensors to provide a holistic view of the state of the planet. All these data are fed into a range of thematic information services designed to benefit the environment and to support policy-makers and other stakeholders to make decisions, coordinate policy areas, and formulate strategies relating to the environment. Moreover, the data will also be used for predicting future climate trends.

Never has such a comprehensive Earth-observation based system been in place before. It will be fully integrated into an informed decision making process, thus enabling economic and social benefits through better access to information globally.

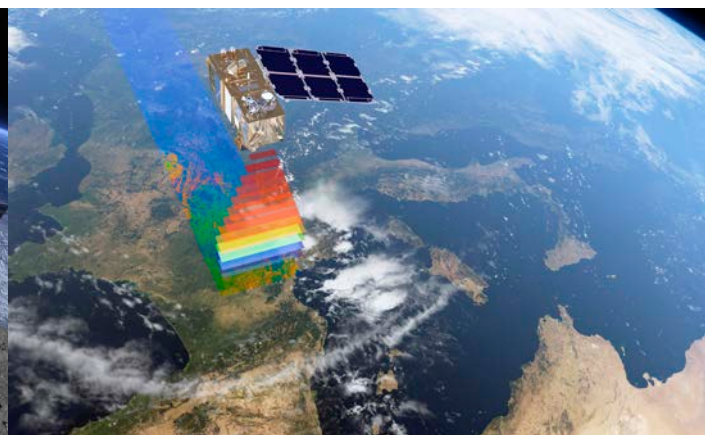
The first dedicated Copernicus satellite missions, a radar imaging mission called Sentinel-1A, and an optical imager mission called Sentinel-2A have been successfully launched (on 3rd April 2014 and on 23rd June 2015). The remaining Sentinels (i.e. Sentinel-3 for global land and marine monitoring, Sentinel-4 and Sentinel-5 for atmospheric composition and Sentinel-6 for oceanography) will be launched within the next years progressively covering all domains of Earth Observation.

Other satellite missions, not designed originally for Copernicus, but contributing to the programme, and a distributed ground segment for the data processing and dissemination complement the space component.

A key feature of Copernicus is the free and open data policy of the Sentinel satellite data. This will enable that Earth observation based information enters completely new domains of daily life. As more data are made available, better decisions can be made, more business will be created and science and research can be achieved through the upcoming flow of Sentinel data.



Sentinel-1A



Sentinel-2A



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4. COMMITTEES

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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. Environmental Protection Agency, USA
 Roger King, Mississippi State University, USA

Scientific Committee

Jon Atli Benediktsson, University of Iceland, Iceland
 Francesca Bovolo, Fondazione Bruno Kessler, Italy
 Gustau 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, Nanjing University, China
 Michael Eineder, DLR, Germany
 Ronan Fablet, Télécom Bretagne, France
 Mathieu Fauvel, University of Toulouse, France
 Laurent Ferro-Famil, University of Rennes, France
 Pierre-Louis Frison, University 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 Genova, Italy
 Allan Nielsen, Technical University of Denmark, Denmark
 Claudia Notanicola, 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

Organizing Committee: LISTIC, University Savoie Mont Blanc, France

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

Webmaster

Quentin Chalabi

Graphic Designer

Vincent Couturier-Doux

5. CONFERENCE INFORMATION

Conference location

Université Savoie Mont Blanc, Annecy-le-Vieux, Campus

Polytech Annecy-Chambéry

5 Chemin de Bellevue, 74940 Annecy-le-Vieux - France

GPS : 45°55'08.7"N, 6°09'28.1"E

Arrival to Annecy and Conference Venue :

- **By plane**

From Geneva airport: check bus transportation

http://www.gva.ch/de/Portaldata/1/Resources/fichiers/voyageurs/Frossard_GVA_Annecy.pdf

Shuttle from Geneva to Annecy

<http://www.geneva-shuttle.com/en/>

From Lyon Saint Exupery airport : check bus transportation

<http://www.voyages-crolard.com/index.aspx?cp=EN>

- **By Highway A41**

Lyon(140km - 1h30), Grenoble(100km - 1h00) - Chambéry(50km - 30mn) - Genève(50km - 30mn).

Highway exit: Annecy Nord

- **By road**

Genève, Chambéry, Aix-les-bains: RN201. Albertville, Bourg-en-bresse: RN508. Chamonix: RN203 to Annecy. Follow directions : "Annecy-le-Vieux" and "Domaine Universitaire".

- **By train : Gare d'Annecy (Annecy Train Station)**

Direct TGV from Paris (3h40) or TER from Lyon (1h50).

- **Coming to the Workshop by Bus from Annecy**

FROM DOWNTOWN TO CONFERENCE :

Take BUS 2 or 4 DIRECTION CAMPUS at stations GARE QUAI SUD or SOMMEILLER or BONLIEU and stop at RESTAU U.

FROM CONFERENCE TO DOWNTOWN :

Take BUS 2 direction PISCINE PATINOIRE or BUS 4 direction SEYNOD NEIGOS and STOP at GARE QUAI EST(4) OR OUEST(2) or SOMMEILLER or BONLIEU.

Link to Bus Company : <http://www.sibra.fr/en>



A 3-day pass for Public Bus Transportation (SIBRA) will be offered to every participants at the registration desk

LIGNE N° 2 Direction **CAMPUS**



BE CAREFUL : SOME BUS STOP AT VIGNIERES STATION (SCHEDULES WITH V IN THE TABLE). TAKE ONLY BUS WITH DIRECTION CAMPUS !

SCHEDULES

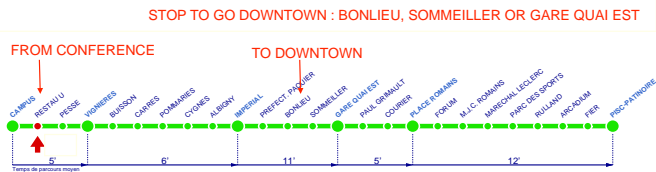
HOUR	MINUTE
06 h	14 40V 56
07 h	11 25 38 50 59V
08 h	15 30V 46 59V
09 h	14 31V 46
10 h	01V 16 31V 46
11 h	00V 16 31V 50
12 h	07V 21 36V 52
13 h	10V 28 44V 58
14 h	14V 30 49V
15 h	05 21V 35 50V
16 h	04 18V 33 48V
17 h	03 18V 33 51V
18 h	07 22V 36 52V
19 h	07 21V 34 52V
20 h	06

Ces horaires, donnés à titre indicatif, sont calculés pour des conditions normales de circulation. Nous faisons de notre mieux pour les respecter. Nous vous remercions de votre compréhension.

Renseignements : ESPACE SIBRA, 21 rue de la Gare - Tél. 04 50 10 04 04 du Lundi au Vendredi de 7h30 à 19h00, le Samedi de 9h00 à 12h00 et de 14h00 à 17h00



LIGNE N° 2 Direction **PISCINE PATINOIRE**



SCHEDULES

HOUR	MINUTE
05 h	59
06 h	36
07 h	15 29 42 57
08 h	12 38
09 h	09 39
10 h	09 39
11 h	14 46
12 h	12 49
13 h	24 50
14 h	22 53
15 h	26 57
16 h	26 56
17 h	27 57
18 h	28
19 h	00 57

Ces horaires, donnés à titre indicatif, sont calculés pour des conditions normales de circulation. Nous faisons de notre mieux pour les respecter. Nous vous remercions de votre compréhension.

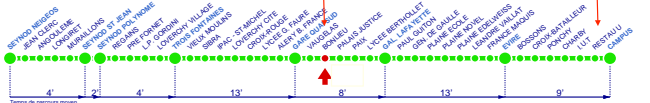
Renseignements : ESPACE SIBRA, 21 rue de la Gare - Tél. 04 50 10 04 04 du Lundi au Vendredi de 7h30 à 19h00, le Samedi de 9h00 à 12h00 et de 14h00 à 17h00



LIGNE N° 4 Direction **CAMPUS**

STOP TO GO CONFERENCE : RESTAU U

FROM DOWNTOWN TO CONFERENCE



SCHEDULES

HEURE	MINUTE
06 h	23 43
07 h	03 24 37 52
08 h	06 21 33 45 58
09 h	12 27 42 58
10 h	14 31 47
11 h	04 21 37 54
12 h	09 23 34 49
13 h	04 21 37 51
14 h	05 21 37 53
15 h	09 24 40 55
16 h	10 25 40 55
17 h	10 25 40 55
18 h	10 24 39 53
19 h	08 25 44 59
20 h	16

Ces horaires, donnés à titre indicatif, sont calculés pour des conditions normales de circulation. Nous faisons de notre mieux pour les respecter. Nous vous remercions de votre compréhension.

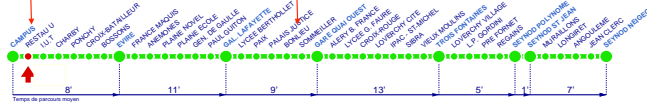
Renseignements : ESPACE SIBRA, 21 rue de la Gare - Tél. 04 50 10 04 04
du Lundi au Vendredi de 7h30 à 19h00,
le Samedi de 9h00 à 12h00 et de 14h00 à 17h00



LIGNE N° 4 Direction **SEYNOD NEIGEOS**

STOP TO GO DOWNTOWN : BONLIEU, SOMMEILLER OR GARE QUAI EST

FROM CONFERENCE TO DOWNTOWN



SCHEDULES

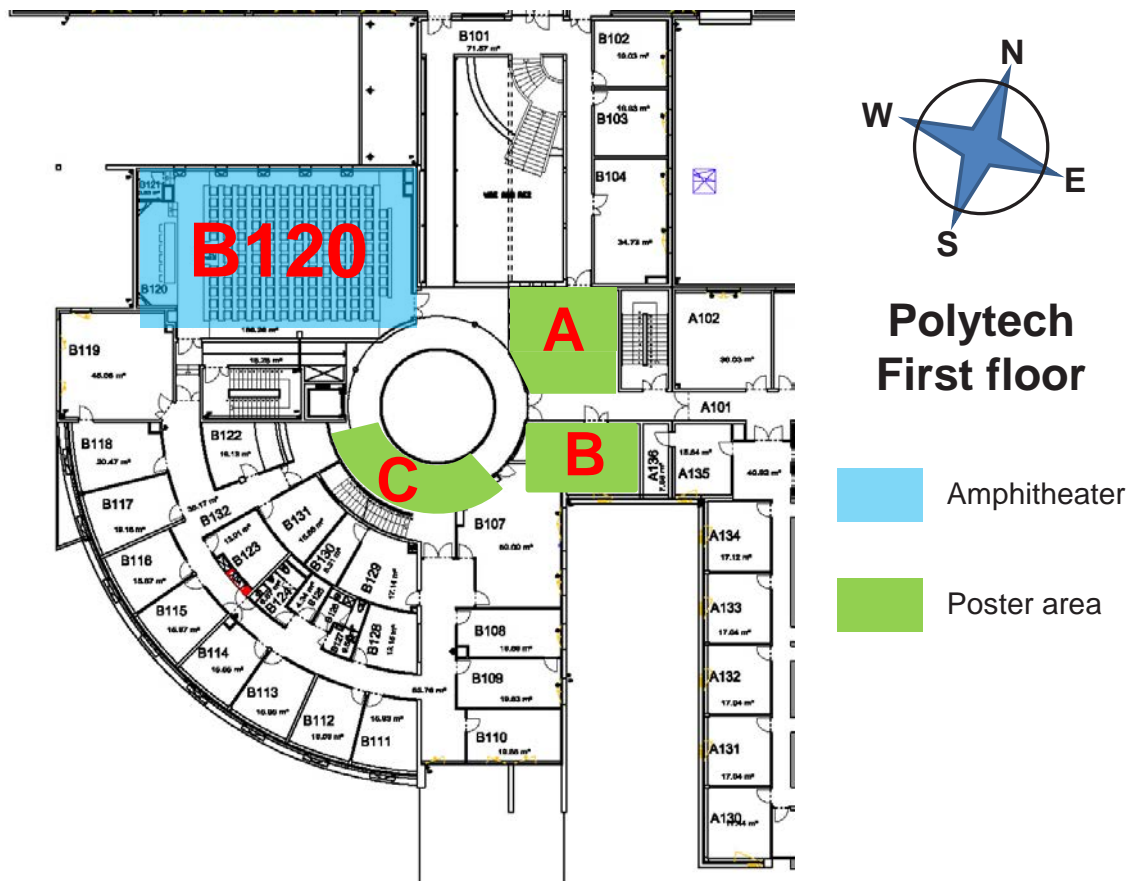
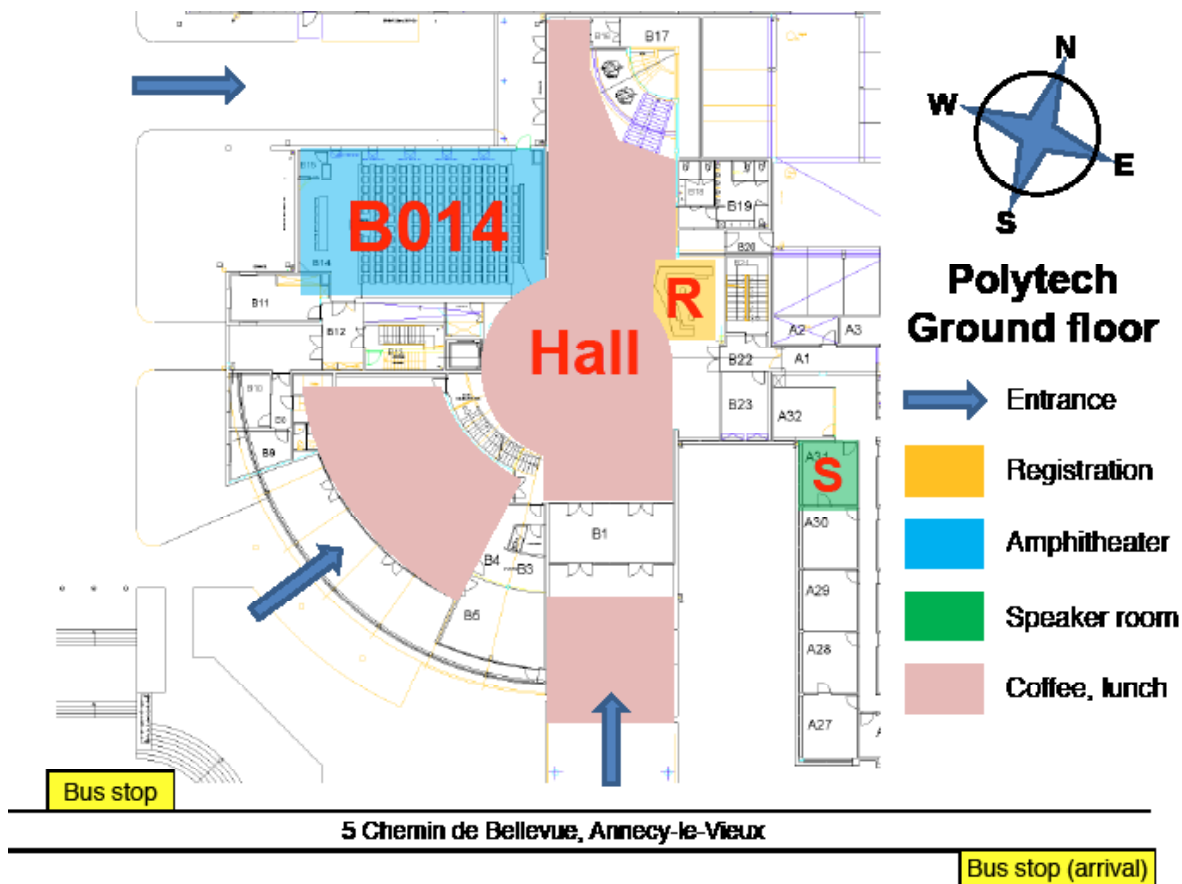
HEURE	MINUTE
06 h	05 25 45
07 h	05 15 25 35 50
08 h	04 17 33 49
09 h	05 22 38 54
10 h	10 26 42 59
11 h	16 33 48
12 h	03 20 35 49
13 h	06 19 33 47
14 h	02 16 32 47
15 h	03 19 35 52
16 h	09 23 38 53
17 h	08 24 40 55
18 h	10 25 40 55
19 h	10 25 40 55

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Renseignements : ESPACE SIBRA, 21 rue de la Gare - Tél. 04 50 10 04 04
du Lundi au Vendredi de 7h30 à 19h00,
le Samedi de 9h00 à 12h00 et de 14h00 à 17h00



Conference Venue Map



Social Events:

Lunches

Lunches on Wednesday 22, Thursday 23 and Friday 24 are included in the registration fees.

Welcome Evening Reception - Wednesday, July 22, 6:45 PM (Point A)

at "Annecy City Hall" (Mairie d'Annecy)



Social Dinner - Wednesday, July 22, 8 PM (Point B)

Dinner cruise on Annecy lake aboard "MS Libellule" with its panoramic dining room.

Boarding from :8.00 p.m

Boat departure : 8:30 p.m

Boat return : 10: 30 p.m

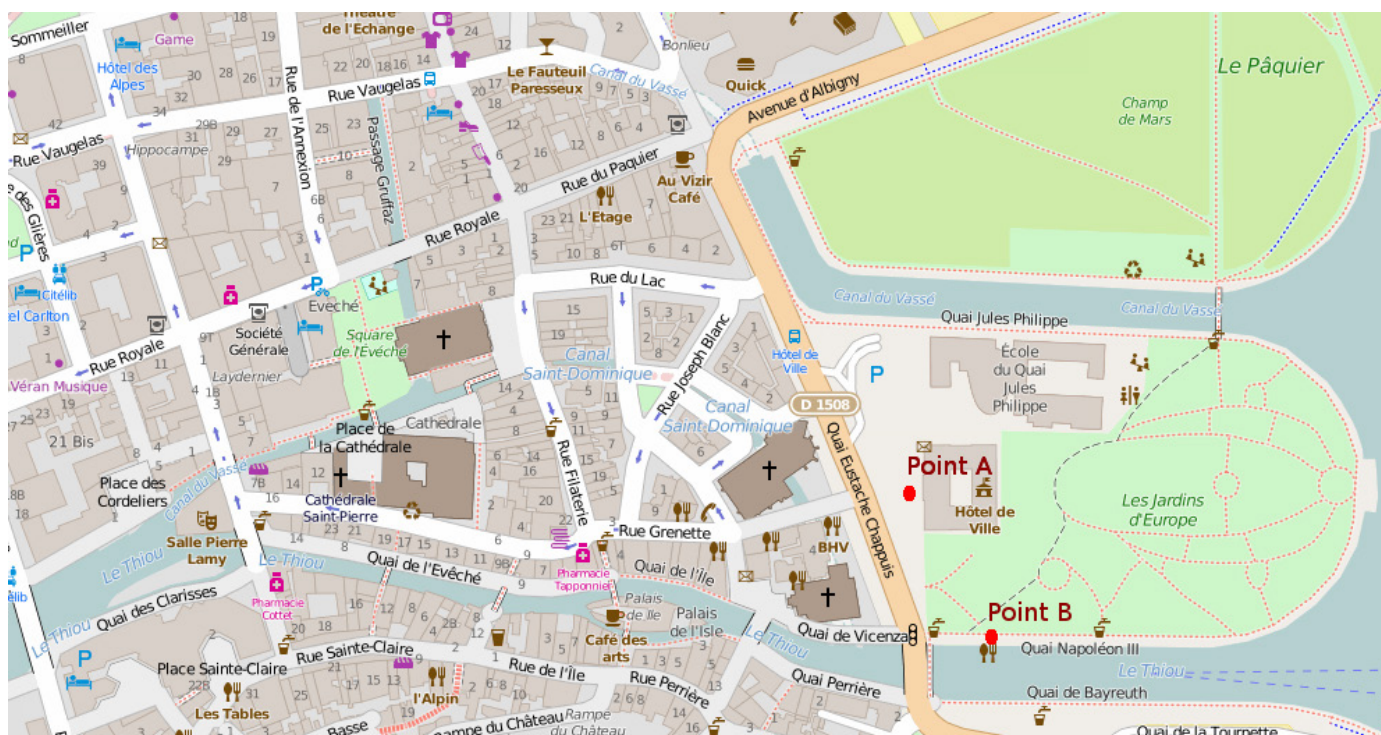
Dancing on board until 00:30 a.m



Registration fees include one dinner (cruise+dinner).

Extra tickets for accompanying guest(s):

80 euros per person should be paid on site at arrival by Cash (euros) or Credit Card.



MULTITEMP 2015 - Technical program overview

Wednesday, 22

8:40	Registration Opening
9:00	Welcome Coffee
10:00	Session 1 (B014) Opening Session
12:00	Lunch
13:00	Session 2 (1st floor) Poster Sessions 2A : Change Detection Techniques 2B : Data reconstruction and inter-calibration 2C : Long / Dense time series 2D : Time series monitoring
14:30	Session 3A (B120) Take 5/ SPOT 4-5 Special Session
	Session 3B (B014) InSAR and ground deformation monitoring Special Session
15:40	Coffee Break
16:00	Session 4A (B120) Long Time series
	Session 4B (B014) Atmosphere artefacts and radiometry
17:00	
18:45	Welcome Evening Reception Annecy City Hall (Mairie d'Annecy - Quai Eustache Chapuis)
20:00	Dinner cruise on Annecy lake Boarding: Quai Napoléon III, Annecy

Thursday, 23

8:40	Session 5A (B120) Cryosphere and global change Special Session	Session 5B (B014) Urban analysis and monitoring Special Session
10:50	Coffee Break	
11:00	Session 6 (1st floor) Poster Sessions 6A : Cryosphere 6B : Urban analysis and monitoring 6C : Data Mining 6D : Change detection and damage assessment 6E : Time series analysis and monitoring	
12:30	Lunch	
13:30	Session 7A (B120) Inverse Problems and Data Assimilation Special Session	Session 7B (B014) Data mining Special Session
15:20	Coffee Break	
15:50	Session 8A (B120) Disaster Assessment Special Session	Session 8B (B014) Multisource data for ecosystem monitoring Special Session
17:40		

Friday, 24

8:40	Session 9 (B014) Image Processing Methods
10:00	Coffee Break
10:30	Session 10 (B014) Forest analysis and monitoring
12:10	Session 11 (B014) : Best Poster Award
12:30	Lunch
14:00	Session 12 (B014) SAR Processing Methods
16:00	Direct Bus to Chambéry Train Station



MULTITEMP 2015

8th International Workshop on the Analysis of Multitemporal Remote Sensing Images
July 22-24, 2015 – Annecy, France

8:40 Registration Opening

9:00 Welcome coffee

10:00 **Session 1 (B014)**
Opening Session
Session chair :
Emmanuel Trouvé, *Université Savoie Mont Blanc, France*

12:00

12:00 Lunch

13:00

13:00 **Session 2A (Zone A)**
Change Detection Techniques
Poster Session
Session chair :
Minh-Tan Pham, *TELECOM Bretagne, France*

Session 2B (Zone A)
Data reconstruction and inter-calibration
Poster Session
Session chair :
Richard Lepage, *Ecole de Technologie Supérieure de Montreal, Canada*

Session 2C (Zone B)
Long / Dense time series Poster Session
Session chair :
14:20 Gregoire Mercier, *TELECOM Bretagne, France*

Session 2D (Zone C)
Time series monitoring Poster Session
Session chair :
Claudia Notarnicola, *EURAC, Italy*

14:30 **Session 3A (B120)**
Take 5/ SPOT 4-5
Special Session
Session chairs :
Mathieu Fauvel, *UMR 1201 DYNAFOR INRA - INP Toulouse, France*

Session 3B (B014)
InSAR and ground deformation monitoring
Special Session
Session chairs :
Michael Eineder, *DLR, Germany*
Virginie Pinel, *ISTerre-IRD, France*

15:40 Olivier Hagolle, *CNES/CESBIO, France*

15:40 Coffee Break

16:00

16:00 **Session 4A (B120)**
Long Time series
Session chairs :
Mathieu Fauvel, *UMR 1201 DYNAFOR INRA - INP Toulouse, France*

Session 4B (B014)
Atmosphere artefacts and radiometry
Session chairs :
Daniele Cerra, *DLR, Germany*
Gregoire Mercier, *Telecom Bretagne, France*

17:00 Olivier Hagolle, *CNES/CESBIO, France*

18:45 **Welcome Evening Reception**
Annecy City Hall
(Mairie d'Annecy - Quai Eustache Chapuis)

20:00 **Dinner cruise on Annecy lake**
Boarding: Quai Napoléon III, Annecy

8:40 Opening of the conference

9:00 Welcome Coffee

10:00 **Session 1 (B014)**

Opening Session

Session chair : Emmanuel Trouvé, *Université Savoie Mont Blanc, France*

10:00 WELCOME FROM THE HOST INSTITUTION

Laurent Foulloy, *Polytech Annecy Chambéry - Université 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, *Univ. Trento, Italy*

11:40 TECHNICAL BOARD OVERVIEW

Gregoire Mercier, *Telecom Bretagne, France*

11:50 OVERVIEW OF MULTITEMP 2015

Emmanuel Trouvé, *Université Savoie Mont Blanc, France*

12:00 Lunch

13:00

13:00 **Poster Session : 4 parallel sessions in zones A, B & C**

Poster until
14:20

Session 2A (Zone A : Posters in Hall B105)

Change Detection Techniques Poster Session

Session chair : Minh-Tan Pham, *TELECOM Bretagne, France*

SATELLITE IMAGE TIME SERIES CLASSIFICATION AND ANALYSIS USING AN ADAPTED GRAPH LABELING

Safa Rejichi & Ferdaous Chaabane, *supcom, Tunisia*

SUPERPIXEL-GUIDED CHANGE DETECTION IN HIGH RESOLUTION SAR IMAGES BASED ON MULTI-SCALE REGION COVARIANCE

Xiaojing Huang & Wen Yang, *School of Electronic Information, Wuhan University, China*

Gui-Song Xia & Mingsheng Liao, *State Key Laboratory of LIESMARS, Wuhan University, China*

GROUND ECHOES FILTERING USING COMPLETED LOCAL BINARY PATTERN AND THE SUPPORT VECTOR MACHINE

Mehdia Hedir & Haddad Boualem, *USTHB, Algeria*

AUTOMATIC CHANGE DETECTION IN HIGH-RESOLUTION REMOTE SENSING IMAGES BY USING A MULTIPLE CLASSIFIER SYSTEM AND SPATIAL FEATURES

Kun Tan & Xiao Jin, *Jiangsu Key laboratory of Resources and Environment Information Engineering, China*

Antonio Plaza, *Department of Technology of Computers and Communications, Spain*

Peijun Du, *Nanjing University, China*

Session 2B (Zone A : Posters in Hall B105)

Data reconstruction and inter-calibration Poster Session

Session chair : Richard Lepage, *Ecole de Technologie Supérieure de Montreal, Canada*

THE EFFECT OF PREPROCESSING STRATEGY ON REGIONAL LAND COVER MAPPING USING MULTITEMPORAL IMAGE MOSAICS

Ruth Sonnenschein & Ruben Remelgado, *EURAC, Italy*

Ion Sola, *Public University of Navarre, Spain*

NORMALIZED DIFFERENCE PHYTOPLANKTON INDEX (NDPI) AND SPATIO-TEMPORAL CLOUD FILTERING FOR MULTITEMPORAL CYANOBACTERIA POLLUTION ANALYSIS ON ERIE LAKE IN 2014

Guoming Gao, Tianzhu Liu & Yanfeng Gu, *School of Electronics and Information Engineering, Harbin Institute of Technology, China*

INPAINTING RESTAURATION FOR INLAND WATER MEXICO ECOSYSTEMS

Alejandra Lopez, *CentroGeo, Mexico*

AN ALTERNATIVE REPRESENTATION OF COARSE-RESOLUTION REMOTE SENSING IMAGES FOR TIME-SERIES PROCESSING

Daniel Kristof, *FÖMI - Institute of Geodesy, Cartography and Remote Sensing, Hungary*

CLOUDSIM: A FAIR BENCHMARK FOR COMPARISON OF METHODS FOR TIMES SERIES RECONSTRUCTION FROM CLOUD AND ATMOSPHERIC CONTAMINATION

Yves Julien, *Global Change Unit, Spain*

Jose Sobrino, *Universidad de Valencia, Spain*

Poster until
14:20

Session 2C (Zone B : Posters in Room B106)
Long / Dense time series Poster Session
Session chair : Gregoire Mercier, *TELECOM Bretagne, France*

EXPLORING DENSE LANDSAT TIME SERIES TO MONITOR PASTURE MANAGEMENT IN THE BRAZILIAN AMAZON
Benjamin Jakimow, Hannes Müller, Patrick Griffiths & Patrick Hostert, *Humboldt-Universität zu Berlin, Geography Department, Germany*

DETERMINING THE EFFECTS OF ENSO PHENOMENA ON ANDEAN AREAS BY APPLYING RADIOMETRIC INDICES ON LONG TIME SERIES
Yady Tatiana Solano Correa, Edgar Leonairo Pencue Fierro & Apolinar Figueroa Casas, *Universidad del Cauca, Colombia*

13 YEARS OF CHANGES IN THE EXTENT AND PHYSIOGNOMY OF MANGROVES AFTER SHRIMP FARMING ABANDONMENT, BALI, INDONESIA

Rinny Rahmania, Christophe Proisy, *IRD-UMR, AMAP, France*

Gaëlle Viennois, *CNRS-UMR, AMAP, France*

Ariani Andayani, *Research Center for Marine Technology, Agency for Marine and Fisheries Research, Ministry of Marine Affairs and Fisheries, Indonesia*

Frida Sidik, *Institute for Marine Research and Observation, Jembrana, Bali, Indonesia*

Aulia Riza Farhan, *Research Center for Marine Technology, Agency for Marine and Fisheries Research, Ministry of Marine Affairs and Fisheries, Indonesia*

Niken Financia Gusmawati, *IFREMER, Nouméa, New Caledonia, New Caledonia*

Juliana Prospero, *CIRAD-UMR, AMAP, France*

Olivier Germain, *Collecte Localisation Satellites, Ramonville, France*

Hugues Lemonnier, *IFREMER, Nouméa, New Caledonia, New Caledonia*

Berni Subki, *Research Center for Marine Technology, Agency for Marine and Fisheries Research, Ministry of Marine Affairs and Fisheries, Indonesia*

Suhardjono, *Herbarium Bogoriense, Indonesian Institute of Sciences (LIPI), Bogor, Indonesia*

Nuryani Widagti, *Institute for Marine Research and Observation, Jembrana, Bali, Indonesia*

Philippe Gaspar, *Collecte Localisation Satellites, Ramonville, France*

RECONSTRUCTION OF MODIS DERIVED PHENOLOGY METRICS AT LANDSAT SPATIAL RESOLUTION

David Frantz, Marion Stellmes, Achim Röder, Thomas Udelhoven, Sebastian Mader & Joachim Hill, *Trier University, Germany*

FOREST COVER CHANGE BETWEEN 2000 AND 2014 IN CENTRAL ASIA

He Yin, Asia Khamzina & Christopher Martius, *Center for Development Research (ZEF), University of Bonn, Germany*

TESTING SATELLITE RAINFALL ESTIMATES FOR YIELD SIMULATION OF A RAINFED CEREAL IN WEST AFRICA

Louise Leroux & Christian Baron, *CIRAD, France*

Seydou B Traoré, *AGRHYMET, Niger*

Danny Lo Seen & Agnès Bégue, *CIRAD, France*

UPDATE OF THE NATIONAL BIOMASS AND CARBON DATASET 2000 USING ALOS PALSAR L-BAND

Oliver Cartus, M Santoro, *Gamma Remote Sensing, Switzerland*

J M Kellndorfer, *Woods Hole Research Center, USA*

MAPPING ANNUAL CROPLAND AT 100 M OVER SAHELIAN AND SUDANIAN AGROSYSTEMS: A KNOWLEDGE-BASED DATA DRIVEN APPROACH USING 100 M PROBA-V TIME SERIES

Marie Julie Lambert, François Waldner & Pierre Defourny, *Earth and Life Institute, Belgium*

Session 2D (Zone C : Posters in central circle, 1st floor)

Time series monitoring Poster Session

Session chair : Claudia Notarnicola, *EURAC, Italy*

A STATISTICAL APPROACH FOR PREDICTING GRASSLAND DEGRADATION IN DISTURBANCE-DRIVEN LANDSCAPES

Anne Jacquin, *University of Toulouse, UMR 1201 INRA - EI Purpan, France*

Michel Goulard, *UMR 1201 INRA, France*

Shawn Hutchinson, *Department of Geography, Kansas State University, USA*

Stacy Hutchinson, *Department of Biological and Agricultural Engineering, Kansas State University, USA*

USE OF MODIS AND SPOT VEGETATION TIME-SERIES DATA FOR MONITORING PHENOLOGICAL VARIATION IN TROPICAL FOREST ECOSYSTEMS IN WESTERN AFRICA AND THE GULIANA SHIELD

Emil Cherrington, Nicolas Barbier, Gregoire Vincent, Daniel Sabatier & Raphaël Pélissier

L'Institut de recherche pour le développement (IRD), France

A METHOD TO MEASURE THE WATER SUPPLYING CAPACITY OF SOIL IN SOUTHWEST CHINA BY USING MULTI-SOURCE VEGETATION INDEX AND DROUGHT INDEX

Yue Qi, *Institute of Arid Meteorology, China Meteorological Administration, China*

Shibo Fang, *Chinese Academy of Meteorological Sciences, China*

MONITORING WINTER WHEAT PHENOLOGY WITH HJ MULTI-TEMPORAL DATA AND STUDYING THE RELATIONSHIP BETWEEN LAI AND NDVI, EVI, SWAI IN NORTH CHINA PLAIN

Yu Weiguo & Fang Shibo, *Institute of Eco-environment and Agro-meteorology, Chinese Academy of Meteorological Sciences, China*

Qi Yue, *Institute of Arid Meteorology, China Meteorological Administration, Lanzhou, 730020, China, China*

A SCALABLE SPATIOTEMPORAL INFERENCE FRAMEWORK BASED ON STATISTICAL SHAPE ANALYSIS FOR NATURAL ECOSYSTEM MONITORING BY REMOTE SENSING

Xiuwen Liu, Atharva Sharma, Xiaojun Yang & Nigel Nye, *Florida State University, USA*

<p>Poster until 14:20</p>	<p>APPLYING THE CHANGE VECTOR ANALYSIS TECHNIQUE FOR ASESSEING SPATIO-TEMPORAL DYNAMICS OF LAND-USE AND LAND-COVER IN THE MU US SANDY LAND, CHINA Arnon Karnieli, <i>The Remote Sensing Laboratory, Ben Gurion University, Israel</i> Zhihao Qin, <i>Institute of Agro-Resources and Regional Planning, Chinese Academy of Agricultural Sciences, China</i> Bo Wu, <i>Institute of Desertification Studies, Chinese Academy of Forestry, China</i> Natalya Panov, <i>The Remote Sensing Laboratory, Ben Gurion University, Israel</i> Feng Yan, <i>Institute of Desertification Studies, Chinese Academy of Forestry, China</i></p> <p>RETRIEVING DAILY EVAPOTRANSPIRATION FROM THE COMBINATION OF GEOSTATIONARY AND POLAR-ORBIT SATELLITE DATA José Miguel Barrios, Nicolas Ghilain, Alirio Arboleda & Françoise Gellens-Meulenberghs <i>Royal Meteorological Institute, Belgium</i></p>	
<p>14:20</p>		
<p>14:30</p>	<p>Session 3A (B120) Take 5/ SPOT 4-5 Special Session Session chair : Mathieu Fauvel, <i>UMR 1201 DYNAFOR INRA - INP Toulouse, France</i> Olivier Hagolle, <i>CNES/CESBIO, France</i></p>	<p>Session 3B (B014) InSAR and ground deformation monitoring Special Session Session chair : Michael Eineder, <i>DLR, Germany</i> Virginie Pinel, <i>ISTerre-IRD, France</i></p>
<p>14:30</p>	<p>SIMULATION OF SENTINEL-2 TIME SERIES WITH SPOT (TAKE5) EXPERIMENTS Olivier Hagolle, <i>CNES/CESBIO, France</i> Sylvia Sylvander, <i>CNES, France</i> Mireille Huc, <i>CESBIO, France</i> Gerard Dedieu, <i>CNES/CESBIO, France</i> Bianca Hoersch, Benjamin Koetz & Olivier Arino, <i>ESA, Italy</i></p>	<p>MULTI-TEMPORAL HIGH-RESOLUTION SAR FOR GEOMETRIC MEASUREMENTS AND FOR GROUND DEFORMATION MONITORING Michael Eineder, <i>DLR, Germany</i></p> <p>LEAST SQUARES COMBINATION OF INSAR AND GNSS MEASUREMENTS FOR GROUND DISPLACEMENT MONITORING Elisabeth Simonetto, Stephane Durand, Jordan Burdack, Laurent Morel, Laurent Polidori & Joëlle Nicolas-Duroy <i>Cnam/GeF/L2G, France</i></p>
<p>15:00</p>	<p>EVALUATION OF HIGH SPATIAL RESOLUTION BRDF-ADJUSTMENTS TECHNIQUES USING MULTI-ANGULAR SPOT4 (TAKE5) ACQUISITIONS Martin Claverie, Eric Vermote & Belen Franch, <i>NASA-GSFC, USA</i> Mohamed Kadiri, <i>CESBIO, France</i> Jeff Masek, <i>NASA-GSFC, USA</i></p>	<p>INSAR MAPPING OF THE 2010 AND 2014 DEFORMATION FIELDS AND LAVA FLOWS OF PITON DE LA FOURNAISE Mary Grace Bato, <i>Institut des Sciences de la Terre, France</i> Jean-Luc Froger & Andrew Harris, <i>Laboratoire Magmas et Volcans, France</i> Nicolas Villeneuve, <i>Observatoire Volcanologique du Piton de la Fournaise, France</i> Marine Tridon & Valerie Cayol, <i>Laboratoire Magmas et Volcans, France</i></p>
<p>15:20</p>	<p>USE OF TIME SERIES OF HIGH RESOLUTION IMAGES FOR AGRICULTURAL LAND COVER MAPPING AND EVAPOTRANSPIRATION ASSESSMENT: PREPARATION OF SENTINEL-2 OPERATIONAL EXPLOITATION. Moreau Yoann, Soleilhavoup Isabelle & Dedieu Gérard, <i>CESBIO, France</i></p>	
<p>15:40</p>		
<p>15:40 16:00</p>	<p>Coffee Break</p>	
<p>16:00</p>	<p>Session 4A (B120) Long Time series Session chair : Mathieu Fauvel, <i>UMR 1201 DYNAFOR INRA - INP Toulouse, France</i> Olivier Hagolle, <i>CNES/CESBIO, France</i></p>	<p>Session 4B (B014) Atmosphere artefacts and radiometry Session chair : Daniele Cerra, <i>DLR, Germany</i> Gregoire Mercier, <i>Telecom Bretagne, France</i></p>
<p>16:00</p>	<p>SECONDARY VEGETATION TRAJECTORIES ON AMAZONIAN PASTURES DERIVED FROM A 28-YEAR RECORD OF LANDSAT TM AND ETM+ DATA Philippe Rufin, Hannes Müller, Dirk Pflugmacher & Patrick Hostert, <i>Geography Department, Humboldt-Universität zu Berlin, Germany</i></p>	<p>ON THE USAGE OF A PIXEL-BASED DARK-OBJECT DATABASE FOR THE ESTIMATION OF AEROSOL OPTICAL DEPTH AND ITS INCORPORATION IN A LARGE AREA LANDSAT PROCESSING FRAMEWORK David Frantz, Achim Röder, Marion Stellmes & Joachim Hill <i>Trier University, Germany</i></p>
<p>16:20</p>	<p>A CHARACTERIZATION OF THE STATUS AND DYNAMICS OF LAND COVER IN THE ACTIVE OKAVANGO CATCHMENT BASED ON VARIOUS MODIS PRODUCTS AND CLIMATE DATA Marion Stellmes, Achim Roeder, David Frantz, Thomas Udelhoven & Joachim Hill, <i>Trier University, Germany</i></p>	<p>CLOUD REMOVAL IN IMAGE TIME SERIES THROUGH UNMIXING Daniele Cerra, Rupert Müller & Peter Reinartz, <i>DLR, Germany</i></p>
<p>16:40 17:00</p>	<p>EXPLORING THE VALIDITY OF THE LONG TERM DATA RECORD V4 DATABASE FOR LAND SURFACE MONITORING Yves Julien, <i>Global Change Unit, University of Valencia, Spain</i> Jose Sobrino, <i>Universidad de Valencia, Spain</i></p>	<p>LANDSAT TM/ETM+ IMAGE COMPOSITING FOR AMAZONIAN VEGETATION MAPPING Jasper Van Doninck & Hanna Tuomisto, <i>University of Turku, Finland</i></p>

8:40 **Session 5A (B120)**
Cryosphere and global change Special Session
Session chair :
Noel Gourmelen, *University of Edinburgh, UK*
Frank Paul, *University of Zurich, Switzerland*

Session 5B (B014)
Urban analysis and monitoring Special Session
Session chair :
Gregoire Mercier, *Telecom Bretagne, France*
Florence Tupin, *TelecomParisTech, France*

10:50

10:50 Coffee Break

11:00

11:00 **Session 6A (Zone C)**
Cryosphere Poster Session
Session chair :
Amaury Dehecq, *LISTIC, University Savoie Mont Blanc*

Session 6B (Zone C)
Urban analysis and monitoring Poster Session
Session chair :
Florence Tupin, *TelecomParisTech, France*

Session 6C (Zone B)
Data Mining Poster Session
Session chair :
Nicolas Méger, *LISTIC, University Savoie Mont Blanc*

Session 6D (Zone A)
Change detection and damage assessment Poster Session
Session chair :
Luz-Maria Perez Saavedra, *CS-SI, France*

Session 6E (Zone A)
Time series analysis and monitoring Poster Session
Session chair :
Thu Trang Le, *LISTIC, University Savoie Mont Blanc*

12:30

12:30 Lunch

13:30

13:30 **Session 7A (B120)**
Inverse Problems and Data Assimilation Special Session
Session chair :
Olivier Talagrand, *Laboratoire de Météorologie Dynamique/ CNRS, France*
Yajing Yan, *LISTIC, University Savoie Mont Blanc*

Session 7B (B014)
Data mining Special Session
Session chair :
Nicolas Méger, *LISTIC, University Savoie Mont Blanc*
Raju Vatsavai, *Carolina State University, USA*

15:20

15:20 Coffee Break

15:50

15:50 **Session 8A (B120)**
Disaster Assessment Special Session
Session chair :
Stéphane May, *CNES, France*
Gregoire Mercier, *Telecom Bretagne, France*

Session 8B (B014)
Multisource data for ecosystem monitoring Special Session
Session chair :
Mathieu Fauvel, *UMR 1201 DYNAFOR INRA - INP Toulouse, France*
Michael Foerster, *Technische Universitaet Berlin, Germany*

17:40

8:40	Session 5A (B120) Cryosphere and global change Special Session Session chair : Noel Gourmelen, <i>University of Edinburgh, UK</i> Frank Paul, <i>University of Zurich, Switzerland</i>	Session 5B (B014) Urban analysis and monitoring Special Session Session chair : Gregoire Mercier, <i>Telecom Bretagne, France</i> Florence Tupin, <i>TelecomParisTech, France</i>
8:40	HOW MULTI-TEMPORAL REMOTE SENSING DATA IMPROVE OUR UNDERSTANDING OF CLIMATE CHANGE IMPACTS ON GLACIERS Frank Paul, <i>University of Zurich, Switzerland</i>	URBAN ANALYSIS AND MONITORING Florence Tupin, <i>TelecomParisTech, France</i>
9:10	GLOBAL SNOW COVER MAPPING USING A MULTI-TEMPORAL MULTI-SENSOR APPROACH Oystein Rudjord, Arnt-Borre Salberg & Rune Solberg <i>Norwegian Computing Center, Norway</i>	BUILDING PROFILE RECONSTRUCTION USING TERRASAR-X DATA TIME-SERIES AND TOMOGRAPHIC TECHNIQUES Martina Porfiri & Laurent Ferro-Famil, <i>University of Rennes 1, France</i> Jean Marie Nicolas, <i>TELECOM ParisTech, France</i>
9:30	REGIONAL GLACIER MAPPING FROM TIME-SERIES OF LANDSAT TYPE DATA Solveig Havstad Winsvold & Andreas Käab, <i>University of Oslo, Norway</i>	FINE CO-REGISTRATION OF VHR IMAGES FOR MULTI-TEMPORAL URBAN AREA ANALYSIS Youkyung Han & Francesca Bovolo, <i>Fondazione Bruno Kessler, Italy</i> Lorenzo Bruzzone, <i>University of Trento, Italy</i>
9:50	ROBUST GLACIER DISPLACEMENT USING KNOWLEDGE-BASED IMAGE MATCHING Bas Altena, Andreas Käab & Christopher Nuth, <i>University of Oslo, Norway</i>	MULTITEMPORAL CLASSIFICATION WITHOUT NEW LABELS: A SOLUTION WITH OPTIMAL TRANSPORT Devis Tuia, <i>University of Zurich, Switzerland</i> Remi Flamary & Alain Rakotomamonjy, <i>LITIS EA 4108 - Université de Rouen, France</i> Nicolas Courty, <i>Université de Bretagne Sud / IRISA, France</i>
10:10	CONTRIBUTION OF TANDEM-X DATA TO DERIVATION OF GLACIER THICKNESS CHANGES IN THE CHAMONIX-MONT BLANC AREA Romain Millan & Amaury Dehecq, <i>LISTIC, Université de Savoie, France</i> Noel Gourmelen, <i>School of Geosciences, University of Edinburgh, UK</i> Etienne Berthier, <i>CNRS, Université de Toulouse, LEGOS, France</i> Emmanuel Trouvé, <i>LISTIC, Université de Savoie, France</i>	COMPARISON BETWEEN SPATIAL AND TEMPORAL ESTIMATION OF ENTROPY ON POLARIMETRIC SAR IMAGES Iora Weissgerber, <i>Telecom Paristech, France</i> Elise Koeniguer & Nicolas Trouvé, <i>ONERA, France</i> Jean-Marie Nicolas, <i>Telecom Paristech, France</i>
10:30	RAPID DYNAMIC ACTIVATION OF A MARINE-BASED ARCTIC ICE CAP Noel Gourmelen, <i>University of Edinburgh, UK</i> Malcolm McMillan, Andrew Shepherd & Anna Hogg, <i>CPOM, University of Leeds, UK</i>	PROCESSING POLARIMETRIC SAR TIME SERIES OVER URBAN AREAS WITH BINARY PARTITION TREES Alberto Alonso-Gonzalez, <i>German Aerospace Center (DLR), Germany</i> Carlos Lopez-Martinez, <i>Universitat Politecnica de Catalunya (UPC), Spain</i> Irena Hajnsek, <i>German Aerospace Center (DLR) - ETH Zurich, Germany</i>
10:50		
11:00	Poster Session : 5 parallel sessions in zones A, B & C	
Poster until 12:30	Session 6A (Zone C : Posters in central circle, 1st floor) Cryosphere Poster Session Session chair : Amaury Dehecq, <i>LISTIC, University Savoie Mont Blanc</i>	
	MAPPING SNOW LINE ALTITUDE FOR LARGE GLACIER SAMPLES FROM MULTITEMPORAL LANDSAT IMAGERY Philipp Rastner & Claudia Notarnicola, <i>Institute of Applied Remote Sensing, EURAC, Italy</i> Lindsey Nicholson & Rainer Prinz, <i>Institute for Meteorology and Geophysics, University of Innsbruck, Austria</i> Rudolf Sailer, <i>Institute of Geography, University of Innsbruck, Austria</i>	
	MULTITEMPORAL MONITORING OF ASTROLABE GLACIER, TERRE ADELIE, ANTARCTICA Etienne Ducasse & Etienne Berthier, <i>CNRS, LEGOS, France</i> Emmanuel Le Meur, Fabien Gillet-Chaulet & Gaël Durand, <i>CNRS, LGGE, France</i> Denis Blumstein, <i>CNES, France</i>	
	DETAILED COMPARISON OF THE GEODETIC AND DIRECT GLACIOLOGICAL MASS BALANCES ON AN ANNUAL TIME SCALE AT HINTEREISFERNER, AUSTRIA Christoph Klug, <i>University of Innsbruck, Faculty of Geo- and Atmospheric Sciences, Institute of Geography, Austria</i> Erik Bollmann, <i>University of Innsbruck, Institute of Geography, Austria</i> Georg Kaser & Rainer Prinz, <i>University of Innsbruck, Institute of Meteorology and Geophysics, Austria</i> Lorenzo Rieg, Rudolf Sailer & Johann Stötter, <i>University of Innsbruck, Institute of Geography, Austria</i>	
	FLUCTUATIONS OF CAUCASIAN GLACIERS IN 20TH CENTURY Irina Bushueva, <i>Institute of Geography Russian academy of Sciences, Russia</i>	

Poster until
12:30

Session 6B (Zone C : Posters in central circle, 1st floor)

Urban analysis and monitoring Poster Session

Session chair : Florence Tupin, *TelecomParisTech, France*

CHARACTERISTICS OF SPATIAL-TEMPORAL SPRAWL IN CHINESE SPECIFIC COASTAL CITIES DURING 1979-2013

Minmin Li & Zengxiang Zhang, *Institute of Remote Sensing and Digital Earth Chinese Academy of Sciences, China*

Danny Lo Seen, *La recherche agronomique pour le développement, France*

Xiaoli Zhao & Xiao Wang, *Institute of Remote Sensing and Digital Earth Chinese Academy of Sciences, China*

LANDSCAPE FEATURES THAT PREVENT OR FOSTER URBAN SPRAWL

Thomas Guyet, *AGROCAMPUS OUEST, UMR6074 IRISA, F-35042 Rennes, France*

DATA FUSION APPROACH FOR URBAN AREA IDENTIFICACION WITH MULTISENSOR INFORMATION

Alejandra Lopez, *CentroGeo, Mexico*

IMPROVED CROP CLASSIFICATION USING MULTITEMPORAL RAPIDEYE DATA

Florian Beyer, Thomas Jarmer & Bastian Siegmann, *University of Osnabrueck, Germany*

Peter Fischer, *German Aerospace Center, Germany*

Session 6C (Zone B : Posters in Room B106)

Data Mining Poster Session

Session chair : Nicolas Méger, *LISTIC, University Savoie Mont Blanc*

UNMIXING THE PATTERNS WITHIN BIG DATA: DISCRIMINATING FORESTS IN FRENCH GUIANA USING THE MODIS TIME-SERIES

Emil Cherrington, Gregoire Vincent, Nicolas Barbier, Daniel Sabatier & Raphael Pelissier, *L'Institut de recherche pour le développement (IRD), France*

DETERMINATION OF PHENOLOGICAL INDICATOR PHASES FOR OPTIMAL SATELLITE DATA SET SELECTION FOR LAND COVER CLASSIFICATIONS

Henning Gerstmann, Markus Möller & Cornelia Gläßer, *University of Halle, Germany*

EXTRACTING CHARACTERISTICS OF SATELLITE IMAGE TIME SERIES WITH DECISION TREES

Thomas Guyet, *AGROCAMPUS OUEST, UMR6074 IRISA, F-35042 Rennes, France*

A DYNAMICAL MODEL TO CLASSIFY THE CONTENT OF MULTITEMPORAL IMAGES EMPLOYING DISTRIBUTED COMPUTING TECHNIQUES

Ivan E. Villalon-Turrubiates, *ITESO, Universidad Jesuita de Guadalajara, Mexico*

MINING TIME SERIES MULTITEMPORAL REMOTE SENSING DATA

Sam Abuomar, Roger King & Nicolas Younan, *Mississippi State University, USA*

Session 6D (Zone A : Posters in Hall B105)

Change detection and damage assessment Poster Session

Session chair : Luz-Maria Perez Saavedra, *CS-SI, France*

A RAPID MAPPING APPROACH TO QUANTIFY DAMAGES CAUSED BY THE 2003 BAM EARTHQUAKE USING HIGH RESOLUTION MULTITEMPORAL OPTICAL IMAGES

Daniela Faur, *University Politehnica of Bucharest, Romania*

Mihai Datcu, *DLR, Germany*

CHANGE DETECTION OF CORAL REEF HABITATS FROM MULTI-TEMPORAL AND MULTI-SOURCE SATELLITE IMAGERY IN BUNAKEN, INDONESIA

Corina Iovan, *Institut de Recherche pour le Développement, France*

Elvan Ampou, *Institut de Recherche pour le Développement, Indonesia*

Serge Andréfouët, *Institut de Recherche pour le Développement, France*

Sylvain Ouillon, *Institut de Recherche pour le Développement, Viet Nam*

Philippe Gaspar, *Collecte Localisation Satellite, France*

CLEAR-CUT MAPPING IN LANDSAT 8 IMAGES WITH A CHANGE DETECTION METHOD BASED ON THE RANDOM FOREST ALGORITHM

Matthieu Molinier, Teemu Mutanen & Oleg Antropov, *VTT Technical Research Centre of Finland LTD, Finland*

LAND COVER CHANGE DYNAMICS AND MULTI-FACTOR ANALYSIS IN HIGH MOUNTAINS BASINS OF COLOMBIAN ANDEANS

Leonairo Pencue-Fierro & Apolinar Figueroa Casas, *Universidad del Cauca, Colombia*

TIME SERIES ANALYSIS OF MULTI-FREQUENCY SAR BACKSCATTER AND BISTATIC COHERENCE IN THE CONTEXT OF FLOOD MAPPING

Sandro Martinis, *German Aerospace Center (DLR), Germany*

Christoph Rieke, *Friedrich-Schiller-University Jena, Germany*

Benjamin Fissmer, *German Aerospace Center (DLR), Germany*

ROAD DAMAGE DETECTION FROM HIGH RESOLUTION SATELLITE IMAGES BASED ON MACHINE LEARNING

Idrissa Coulibaly, Moslem Ouled Sghaier, Richard Lepage & Michele Saint-Jacques, *Ecole de technologie Supérieure de Montreal, Canada*

<p>Poster until 12:30</p>	<p>Session 6E (Zone A) Time series analysis and monitoring Poster Session Session chair : Thu Trang Le, <i>LISTIC, University Savoie Mont Blanc</i></p> <p>COMPARING UAV- AND MODIS-DERIVED PHENOLOGY METRICS OVER A RANGELAND SITE IN ALBERTA, CANADA Mustafizur Rahman & Greg Mcdermid, <i>University of Calgary, Canada</i></p> <p>PREDICTION OF NDVI FOR GRASSLAND HABITATS BY FUSING RAPIDEYE AND LANDSAT IMAGERY Tobias Schmidt, Michael Förster, Philipp Gärtner & Birgit Kleinschmit, <i>Technische Universität Berlin, Germany</i></p> <p>MONITORING FOREST RECOVERY WITH CHANGE METRICS DERIVED FROM LANDSAT TIME SERIES STACKS Philipp Gärtner, <i>TU Berlin, Germany</i> Birgit Kleinschmit, <i>Technical University Berlin, Germany</i></p> <p>USING SPATIAL CONTEXT TO IMPROVE NEAR REAL-TIME DEFORESTATION MAPPING IN DRY FOREST Eliakim Hamunyela, Jan Verbesselt & Martin Herold, <i>Wageningen University, Netherlands</i></p> <p>MULTI-TEMPORAL ANALYSIS OF RAPIDEYE DATA TO DETECT NATURAL VEGETATION PHENOLOGY IN THE NEGEV, ISRAEL Cornelia Glaesser, Stefanie Elste, Ivo Walther & Christian Götze, <i>Martin Luther University Halle, Germany</i></p> <p>QUANTIFYING THE EFFECT OF CLIMATE VARIABLES ON VEGETATION INDICES BY A TIME SERIES PREDICTION MODEL Alexandra Shtein & Arnon Karnieli, <i>Ben-Gurion University of the Negev, Israel</i></p>
12:30	

12:30	Lunch
13:30	

<p>13:30 Oral until 15:20</p>	<p>Session 7A (B120) Inverse Problems and Data Assimilation Special Session Session chair : Olivier Talagrand, <i>Laboratoire de Météorologie Dynamique / CNRS, France</i> Yajing Yan, <i>LISTIC, University Savoie Mont Blanc</i></p>	<p>Session 7B (B014) Data mining Special Session Session chair : Nicolas Méger, <i>LISTIC, University Savoie Mont Blanc</i> Raju Vatsavai, <i>Carolina State University, USA</i></p>
13:30	<p>DATA ASSIMILATION: A BRIEF OVERVIEW Olivier Talagrand, <i>LMD / CNRS, France</i></p>	<p>MULTITEMPORAL DATA MINING: FROM BIOMASS MONITORING TO NUCLEAR PROLIFERATION DETECTION Ranga Raju Vatsavai, <i>North Carolina State University, USA</i></p>
14:00	<p>ACCOUNTING FOR MISSING DATA IN SPARSE WAVELET REPRESENTATION OF OBSERVATION ERROR CORRELATIONS Arthur Vidard, <i>Inria, France</i> Maëlle Nodet, <i>Universités de Grenoble, France</i> Vincent Chabot, <i>Météo-France, France</i></p>	<p>A SWAP RANDOMIZATION APPROACH FOR MINING MOTION FIELD TIME SERIES OVER THE ARGENTIÈRE GLACIER Youen Pericault & Catherine Pothier, <i>SMS-ID Laboratory, INSA de Lyon, France</i> Nicolas Méger, <i>LISTIC laboratory, Polytech Annecy-Chambéry, France</i> Christophe Rigotti, <i>LIRIS laboratory, INSA de Lyon, France</i> Flavien Vernier, Ha-Thai Pham & Emmanuel Trouvé, <i>LISTIC laboratory, Polytech Annecy-Chambéry, France</i></p>
14:20	<p>DATA ASSIMILATION IN MULTISCALE SYSTEMS: AN RDS APPROACH Nishanth Lingala, Navaratnam Sri Namachchivaya & Hoong Chieh Yeong, <i>University of Illinois at Urbana - Champaign, USA</i></p>	<p>NUMERICAL MODELS TO FORECAST THE SUGARCANE PRODUCTION IN REGIONAL SCALE BASED ON TIME SERIES OF NDVI/AVHRR IMAGES Renata Ribeiro Do Valle Gonçalves & Jurandir Zullo Junior, <i>Cepagri/Unicamp, Brazil</i> Tais Marques Peron, Silvio Roberto Medeiros Evangelista, Luciana Alvim Santos Romani, <i>Embrapa Agricultural Informatics, Brazil</i></p>
14:40	<p>MODELING HIGH RAINFALL REGIONS FOR FLASH FLOOD NOWCASTING Yann Lepoittevin & Isabelle Herlin, <i>Inria, France</i></p>	<p>SPATIO-TEMPORAL CHARACTERIZATION IN SATELLITE IMAGE TIME SERIES Anamaria Radoi, <i>University Politehnica of Bucharest, Romania</i> Mihai Datcu, <i>DLR, Germany</i></p>

15:00	<p>EXPLOITING SATELLITE IMAGE TIME SERIES FOR MONITORING ECOLOGICAL QUALITY PARAMETERS OF FRENCH RESERVOIRS Thierry Tormos & Pierre-Alain Danis, <i>Onema/Irstea, France</i> Tristan Harmel, <i>Irstea, France</i> Malik Chami, <i>CNRS, France</i></p>	<p>CONSISTENT FOREST CHANGE MAPS 1982-2010 FROM AVHRR TIME SERIES: CASE STUDIES FOR SOUTH AMERICA AND INDONESIA Johannes Eberenz, Martin Herold & Jan Verbesselt, <i>Wageningen University, Netherlands</i> Pierre Defourny, <i>Université Catholique de Louvain, Earth and Life Institute, Belgium</i> Arief Wiyaya, <i>Center for International Forestry Research (CIFOR), Indonesia</i> Holly Gibbs, <i>Center for Sustainability & the Global Env., University of Wisconsin, USA</i> Erik Lindquist, <i>Forest Assessment, Management and Conservation Division, FAO, Italy</i> Olivier Arino, <i>European Space Agency, ESA-ESRIN, Italy</i> Frédéric Achard, <i>Joint Research Centre (JRC) of the European Commission, Italy</i></p>
15:20 15:50	Coffee break	
15:50	<p>Session 8A (B120) Disaster Assessment Special Session Session chair : Stéphane May, <i>CNES, France</i> Gregoire Mercier, <i>Telecom Bretagne, France</i></p>	<p>Session 8B (B014) Multisource data for ecosystem monitoring Special Session Session chair : Mathieu Fauvel, <i>UMR 1201 DYNAFOR INRA - INP Toulouse, France</i> Michael Foerster, <i>Technische Universitaet Berlin, Germany</i></p>
15:50	<p>INTERNATIONAL CHARTER 'SPACE AND MAJOR DISASTERS' AND RAPID MAPPING PRODUCTS Stéphane May, <i>CNES, France</i></p>	<p>EVALUATING THE TEMPORAL STABILITY OF SYTHETICALLY GENERATED TIME-SERIES FOR CROP TYPES IN CENTRAL GERMANY Michael Foerster, <i>Technische Universitaet Berlin, Germany</i> Markus Möller, <i>University of Halle, Dep. of Remote Sensing, Germany</i> Feng Gao, <i>US Department of Agriculture, Hydrology and Remote Sensing Laboratory, USA</i> Tobias Schmidt, Philipp Gaertner & Birgit Kleinschmit, <i>Technische Universitaet Berlin, Germany</i></p>
16:20	<p>DEVELOPMENT OF A REMOTE SENSING BASED FAST RESPONSE SYSTEM TO SUPPORT THE MANAGEMENT OF STORM CALAMITIES IN FORESTS Oliver Bauer & Rudolf Seitz, <i>Bavarian State Institute of Forestry, Germany</i> Clement Atzberger & Kathrin Einzmann, <i>University of Natural Resources and Life Sciences, Austria</i> Andreas Müller, Andreas Schmitt & Andreas Hirner, <i>German Aerospace Center, Germany</i> Matthias Frost, <i>Bavarian State Forest Enterprise, Germany</i> Monika Kanzian, <i>Austrian Federal Forest Enterprise, Austria</i></p>	<p>COUPLING OF PHENOLOGICAL INFORMATION AND SYTHETICALLY GENERATED TIME-SERIES FOR CROP TYPES AS INDICATOR FOR VEGETATION COVERAGE INFORMATION Markus Möller & Henning Gerstmann, <i>Martin Luther University Halle-Wittenberg, Department of Remote Sensing and Cartography, Germany</i> Feng Gao, <i>US Department of Agriculture, Hydrology and Remote Sensing Laboratory, USA</i> Michael Förster, <i>Technical University Berlin, Geoinformation in Environmental Planning Lab, Germany</i> Detlef Thürkow, <i>University of Halle, Dep. of Remote Sensing, Germany</i></p>
16:40	<p>3D DISPLACEMENT RETRIEVAL ON GLACIAL AREAS BY AIRBORNE PHOTOGRAMMETRY Haixing He, <i>Laboratoire EDYTEM, Université de Savoie, France</i> Flavien Vernier, <i>Laboratoire LISTIC, Université de Savoie, France</i> Thierry Villemain, <i>Laboratoire EDYTEM, Université de Savoie, France</i> Umberto Morra di Cella, <i>ARPA Valle d'Aosta - A.O. Cambiamenti Climatici, Italy</i></p>	<p>TRENDS IN 15-YEAR MODIS NDVI TIME SERIES FOR MEXICO Rene Colditz, <i>National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico</i> Martha Bonilla Moheno, <i>Instituto de Ecología, A.C (INECOL), Mexico</i> Rainer Ressler, <i>National Commission for the Knowledge and Use of Biodiversity (CONABIO), Mexico</i></p>
17:00	<p>PRIMAL SKETCH OF IMAGE SERIES WITH EDGE PRESERVING FILTERING. APPLICATION TO CHANGE DETECTION Stéphane May, <i>CNES, France</i> Charlotte Pelletier, <i>CESBIO, France</i></p>	<p>TOWARDS THE LARGE-SCALE ASSESSMENT OF VEGETATION BIOMASS PRODUCTION STABILITY Wanda De Keersmaecker, Stef Lhermitte, Laurent Tits, Olivier Honnay, Pol Coppin & Ben Somers, <i>KULeuven, Belgium</i></p>
17:20	<p>CHANGE DETECTION USING MULTISCALE SEGMENTATION AND KULLBACK-LEIBLER DIVERGENCE: APPLICATION ON ROAD DAMAGE EXTRACTION Moslem Ouled Sghaier, Idrissa Coulibaly & Richard Lepage, <i>École de technologie supérieure, Canada</i></p>	<p>ALPINE ALGORITHMS-TIME SERIES OF INNOVATIVE REMOTE SENSING PRODUCTS FOR ALPINE AREAS: SNOW COVER, LEAF AREA INDEX AND SOIL MOISTURE Claudia Notarnicola, Sarah Asam, Mattia Callegari, Armin Costa, Ludovica De Gregorio, Felix Greifeneder, Roberto Monsorno & Bartolomeo Ventura, <i>EURAC, Italy</i></p>
17:40		

8:40 **Session 9 (B014)**
Image Processing Methods
Session chairs :
Richard Lepage, *Ecole de Technologie Supérieure de Montreal, Canada*
Allan Nielsen, *Technical University of Denmark, Denmark*

10:00

10:00 Coffee Break

10:30

10:30 **Session 10 (B014)**
Forest Analysis and Monitoring
Session chairs :
Emil Cherrington, *L'Institut de recherche pour le développement (IRD), France*
Mathieu Fauvel, *UMR 1201 DYNAMFOR INRA - INP Toulouse, France*

12:10

12:10 **Session 11 (B014)**
Best Poster Award
Session chairs :
Abdourrahmane Atto, *LISTIC, University Savoie Mont Blanc*
Mathieu Fauvel, *UMR 1201 DYNAMFOR INRA - INP Toulouse, France*
Gregoire Mercier, *Telecom Bretagne, France*
Emmanuel Trouvé, *Polytech Annecy Chambéry - University Savoie Mont Blanc, France*

12:20

12:30 Lunch

14:00

14:00 **Session 12 (B014)**
SAR Processing Methods
Session chairs :
Abdourrahmane Atto, *LISTIC, University Savoie Mont Blanc*
Flora Weissgerber, *Telecom Paristech, France*

16:00

16:00 Direct Bus to Chambéry Train Station

8:40	Session 9 (B014) Image Processing Methods Session chair : Richard Lepage, <i>Ecole de Technologie Supérieure de Montreal, Canada</i> Allan Nielsen, <i>Technical University of Denmark, Denmark</i>
8:40	CHANGE DETECTION IN BI-TEMPORAL DATA BY CANONICAL INFORMATION ANALYSIS Allan A. Nielsen & Jacob S. Vestergaard, <i>Technical University of Denmark, Denmark</i>
9:00	PHENOLOGICAL METRICS EXTRACTION USING RAPIDEYE AND MODIS FOR AGRICULTURAL LAND-USE TYPES Xingmei Xu & Daniel Doktor, <i>Helmholtz-Centre for Environmental Research — UFZ, Germany</i>
9:20	VISUALIZING DECADAL LANDSCAPE CHANGES USING NDVI TIME SERIES OF DIFFERENT RESOLUTION WITH THE CAT TRANSFORM Guillermo Castilla, <i>U of Calgary / NRCan CFS, Canada</i> Rasim Latifovic, Darren Pouliot & Ron Hall <i>Natural Resources Canada, Canada</i> Jen Hird & Greg Mcdermid, <i>University of Calgary, Canada</i>
9:40	REGION BASED POLSAR IMAGE CHANGE DETECTION USING ANALYTIC INFORMATION-THEORETIC DIVERGENCE Hui Song & Wen Yang, <i>Wuhan University, China</i> Huang Pingping, <i>College of Information Engineering, Inner Mongolia University of Technology, China</i> Xin Xu, <i>Wuhan University, China</i>
10:00	
10:00	Coffee break
10:30	Session 10 (B014) Forest Analysis and Monitoring Session chair : Emil Cherrington, <i>L'Institut de recherche pour le développement (IRD), France</i> Mathieu Fauvel, <i>UMR 1201 DYNAFOR INRA - INP Toulouse, France</i>
10:30	SEPARATING DEFOLIATOR AND BARK BEETLE DISTURBANCES USING LANDSAT TIME SERIES Cornelius Senf & Dirk Pflugmacher, <i>Humboldt-Universität zu Berlin, Germany</i> Mike Wulder, <i>Canadian Forest Service, Canada</i> Patrick Hostert, <i>Humboldt-Universität zu Berlin, Germany</i>
10:50	A ROBUST METHOD FOR MONITORING NET FOREST DISTURBANCES IN TWO SOUTH AMERICAN SITES WITH DIFFERENT DATA DENSITY Mathieu Decuyper, Ben Devries & Jan Verbesselt, <i>Wageningen University, Netherlands</i> Shijo Joseph, <i>CIFOR, Indonesia</i> Christopher Martius, <i>CIFOR, Indonesia</i> Martin Herold, <i>Wageningen University, Netherlands</i>
11:10	TREE SPECIES DISCRIMINATION IN TEMPERATE WOODLAND USING HIGH SPATIAL RESOLUTION FORMOSAT-2 TIME SERIES David Sheeren, Mathieu Fauvel & Carole Planque, <i>University of Toulouse, INP-ENSAT, DYNAFOR Lab., France</i> Jérôme Willm, <i>INRA, DYNAFOR Lab., France</i> Jean-François Dejoux, <i>CESBIO Lab., France</i>
11:30	EVALUATION OF THE EXTENSION OF THE SPOT-VEGETATION NDVI TIME SERIES WITH PROBA-V DATA Else Swinnen, Carolien Toté, Wouter Dierckx, Pieter Kempeneers & Bruno Smets, <i>VITO, Belgium</i>
11:50	TEMPORAL STABILITY OF MANGROVE MULTISPECTRAL SIGNATURES AT FINE SCALES Gaëlle Viennois, <i>AMAP - CNRS, France</i> Christophe Proisy, <i>AMAP - IRD, France</i> Ariani Andayani, <i>Ministry of Marine Affairs and Fisheries, Indonesia</i> Rinny Rahmania, <i>AMAP - IRD, France</i> Juliana Prospero, <i>AMAP - CIRAD, France</i> Frida Sidik, <i>Institute for Marine Research and Observation, Indonesia</i> Berni Subki, <i>Ministry of Marine Affairs and Fisheries, Indonesia</i> Suhardjono, <i>Herbarium Bogoriense, Indonesia</i> Nuryani Widagti, <i>Institute for Marine Research and Observation, Indonesia</i> Olivier Germain & Philippe Gaspar, <i>Collecte Localisation Satellites, France</i>
12:10	

12:10 Session 11 (B014)
Best Poster Award
 Session chair :
 Abdourrahmane Atto, *LISTIC, University Savoie Mont Blanc*
 Mathieu Fauvel, *UMR 1201 DYNAFOR INRA - INP Toulouse, France*
 Gregoire Mercier, *Telecom Bretagne, France*
 Emmanuel Trouvé, *LISTIC, University Savoie Mont Blanc*

12:20

12:30 Lunch

14:00

14:00 Session 12 (B014)
SAR Processing Methods
 Session chair :
 Abdourrahmane Atto, *LISTIC, University Savoie Mont Blanc*
 Flora Weissgerber, *Telecom Paristech, France*

14:00 SPARSE + SMOOTH DECOMPOSITION MODELS FOR MULTI-TEMPORAL SAR IMAGES
 Sylvain Lobry & Florence Tupin, *Télécom ParisTech, France*
 Loïc Denis, *Laboratoire Hubert Curien, France*

14:20 A KEYPOINT APPROACH FOR CHANGE DETECTION BETWEEN SAR IMAGES BASED ON GRAPH THEORY
 Minh-Tan Pham & Grégoire Mercier, *TELECOM Bretagne, France*
 Julien Michel, *CNES, France*

14:40 CHANGE ANALYSIS OF DUAL POLARIMETRIC SENTINEL-1 SAR IMAGE TIME SERIES USING STATIONARY WAVELET TRANSFORM AND CHANGE DETECTION MATRIX
 Thu Trang Le, Abdourrahmane Atto & Emmanuel Trouve, *LISTIC, Polytech Annecy-Chambéry, Savoie Mont Blanc University, France*

15:00 AGRICULTURAL MONITORING WITH POLARIMETRIC SAR TIME SERIES
 Alberto Alonso-Gonzalez & Thomas Jagdhuber, *German Aerospace Center (DLR), Germany*
 Irena Hajnsek, *German Aerospace Center (DLR) - ETH Zurich, Germany*

15:20 MULTIVARIATE STATISTICAL MODELING FOR MULTI-TEMPORAL SAR CHANGE DETECTION USING WAVELET TRANSFORMS
 Nizar Bouhlel, *IUT d'Annecy, University Savoie Mont Blanc, France*
 Guillaume Ginolhac, Eric Jolibois & Abdourrahmane Atto, *LISTIC - Polytech'Annecy-Chambry, France*

15:40 DEFORMATION ESTIMATION ON LOW COHERENCE AREAS BY MEANS OF POLARIMETRIC DIFFERENTIAL SAR INTERFEROMETRY
 Stephane Guillaso, *Technische Universität Berlin, Germany*
 Franck Garestier, *University of Caen, M2C, France*

16:00

16:00 Direct Bus to Chambéry Train Station

• OPENING CEREMONY SPEAKERS

PLENARY 1 (Wednesday, 22, July, 10:10)

COPERNICUS PROGRAMME - AN OPERATIONAL LONG-TERM EUROPEAN EARTH OBSERVATION SYSTEM

Simon L. G. JUTZ, *European Space Agency (ESA)*

Abstract :

Copernicus is the most ambitious, most comprehensive Earth Observation system worldwide. It aims at giving decision-makers better information to act upon, at global, continental, national and regional level and to provide scientists with a continuous and frequent data coverage of the Earth.

The European Union (EU), represented by the European Commission, leads the overall programme, while the European Space Agency (ESA) coordinates the space component. Similar to meteorology, satellite data is combined with data from airborne and ground sensors to provide a holistic view of the state of the planet – an overall health check of our planet.

The first dedicated Copernicus satellite mission, a radar imaging mission called Sentinel-1A, was successfully launched on 3rd April 2014. The next mission is the first unit of the optical imager, Sentinel-2, and will be launched in June this year. The remaining Sentinels will be launched within the next years and will be progressively covering all domains of Earth Observation.

Copernicus will provide accurate, up-to-date and globally-available information on an operational basis for services and applications related to land, sea/ocean and atmospheric monitoring as well as to emergency response, climate change, and security in support of European policies.

The Copernicus Space Component enables free and full access to the Sentinel data for everybody. The Sentinel missions are primarily designed to provide routine observations for operational services. However the Sentinel missions are also very attractive for performing state of the art scientific research and developing innovative applications. Furthermore, the uptake of the data by the science communities is essential for improving existing services and/or developing new services, and thus supporting the evolution of the overall system.



Biography :

Simon Jutz was nominated Head of ESA's Copernicus Space Office in April 2014, responsible for coordinating ESA's Copernicus activities and liaising with the EC, national bodies, industry, and ESA delegations. Mr. Jutz joined ESA in 1992 with key management responsibilities as Head of User Services and Mission Planning Office in the Earth Observation Programmes Directorate and Operational Lead and Executive Secretariat Member of the International Charter Space and Major Disasters. Prior to his ESA career, Mr. Jutz worked as scientific coordinator and lecturer at the Remote Sensing Working Group of the University of Munich and research fellow at the Central Institute for Photogrammetry and Remote Sensing of the Germany Research Foundation.

Mr. Jutz holds a Diplom degree in Geology with specialization in Remote Sensing and Ore Prospection from the Ludwig-Maximilians-University Munich.

Simon L. G. Jutz
 Head of ESA Copernicus Space Office
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 European Space Agency, Via Galileo Galilei, c. p. 64,
 00044 Frascati, (RM) (Italy)

PLENARY 2 (Wednesday, 22, July, 10:40)**SENTINEL-2: OPPORTUNITIES AND CHALLENGES FOR RESEARCH AND APPLICATIONS**

G rard Dedieu, *Centre d'Etudes Spatiales de la Biosph re (CESBIO), France*

Abstract:

The Sentinel-2 constellation, with its two satellites, will offer a set of the unprecedented capabilities : global routine coverage at high ground resolution (10 to 60m), revisit of 5 days under same viewing conditions, 13 spectral bands. These capabilities makes Sentinel-2 a unique system eagerly awaited by users. Sentinel-2 will offer the opportunity to address science and societal issues regarding land in a much more efficient way than allowed by the current systems. However, these capabilities are also challenging the ability of the scientific community to get the most of the data. After briefly recalling the main characteristics of Sentinel-2, this presentation provides some examples of the opportunities offered by Sentinel-2 in areas such as land cover monitoring, vegetation functioning, and water and carbon fluxes. However, these new opportunities come together with new challenges. The presentation tries to identify such challenges, such as the need to build algorithms able to provide robust results over large areas without no or little human interaction, or the need to exploit the complementarities between Sentinel-2 and Sentinel-1.

**Biography :**

Dr. G rard DEDIEU has a background in Physics and more than 30 years of experience in the use of remote sensing for land surface studies. He first specialized in the pre-processing of satellite measurements (atmospheric effects corrections). He developed methods to estimate surface variables (albedo, solar radiation, net primary productivity). His main interests are now in the use of high spatial and temporal resolution satellite image time series for land surface issues, mainly focusing on agriculture, and on new approaches for developing the utilization of Earth Observation data. G. Dedieu is the principal investigator of the French-Israeli Earth Observation Mission Ven s due to be launched in 2016.

PLENARY 3 (Wednesday, 22, July, 11:10)

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

Lorenzo Bruzzone, *Remote Sensing Laboratory, Department of Information Engineering and Computer Science, University of Trento, Italy*

Abstract :

Since 2001, when the MultiTemp series was established and the first workshop held in Trento (Italy), the availability of multitemporal images has dramatically increased changing completely the role of the time variable in remote sensing. A large number of new satellite remote sensing missions have been launched and operated resulting in an enhanced capability to acquire multitemporal images of large areas of the Earth surface, with improved temporal, spectral and spatial resolution. Moreover, since 2008 with the new policy of opening the Landsat archive, every scientist and end-user can obtain time series of relatively high resolution images for free. This policy is now adopted also by other recent missions (e.g., the Sentinel satellites of ESA in the framework of the European Copernicus program). Such a new scenario significantly increased the interest of the remote sensing community in the temporal domain resulting in new data analysis techniques and applications. The talk will analyze the evolution of the concept of time variable in remote sensing relating it to the history of the MultiTemp workshop series and identifying both the main milestones achieved from 2001 to now and the main open issues currently related to multitemporal images. In particular, the properties of the images acquired by the last generation sensors will be analyzed. The increased geometrical resolution of multispectral and SAR sensors, the increased revisit time of high resolution systems, and the expected availability in the near future of time series of hyperspectral images result in very important new possible applications as well as many different methodological problems. These problems require the development of a new generation of methods for the analysis of multitemporal images and temporal series of data.



Biography :

Lorenzo Bruzzone received the Laurea (M.S.) degree in electronic engineering (summa cum laude) and the Ph.D. degree in telecommunications from the University of Genoa, Italy, in 1993 and 1998, respectively. He is a Full Professor of telecommunications at the University of Trento, Italy, where he teaches remote sensing, radar, and electrical communications. He is the founder and the director of the Remote Sensing Laboratory in the Department of Information Engineering and Computer Science, University of Trento. His current research interests are in the areas of remote sensing, radar and SAR, signal processing, and pattern recognition. He promotes and supervises research on these topics within the framework of many national and international projects. He is the author (or coauthor) of 161 papers in referred international journals (111 in IEEE journals), more than 220 papers in conference proceedings, and 17 book chapters. He is editor/co-editor of 16 books/conference proceedings. He was invited as keynote speaker in more than 30 international conferences. Since 2009 he is a member of the Administrative Committee of the IEEE Geoscience and Remote Sensing Society. Dr. Bruzzone ranked first place in the Student Prize Paper Competition of the 1998 IEEE IGARSS (Seattle, July 1998). Since that time he was recipient of many international honors and awards. Dr. Bruzzone was a Guest Co-Editor of different Special Issues of international journals. He is the co-founder of the IEEE International Workshop on the Analysis of Multi-Temporal Remote-Sensing Images (MultiTemp) series and is currently a member of the Permanent Steering Committee of this series of workshops. Since 2003 he has been the Chair of the SPIE Conference on Image and Signal Processing for Remote Sensing. He has been Editor-in-Chief of the IEEE Geoscience and Remote Sensing Newsletter (2010-2012). Since 2013 he has been the founder Editor-in-Chief of the IEEE Geoscience and Remote Sensing Magazine. He is an Associate Editor for the IEEE Transactions on Geoscience and Remote. Since 2012 he has been appointed Distinguished Speaker of the IEEE Geoscience and Remote Sensing Society. He is IEEE Fellow.

• SPECIAL SESSION SPEAKERS

SPECIAL SESSION : SPOT4-5/Take 5 (Wednesday, 22, July, 14:30)

SIMULATION OF SENTINEL-2 TIME SERIES WITH SPOT (TAKE5) EXPERIMENTS

Olivier Hagolle, *CNES/CESBIO*

Abstract :

The Sentinel-2 mission is part of the European Copernicus program headed by the European Commission with the European Space Agency (ESA). This optical remote sensing mission will gather the following features for the first time : - Resolution : 10m, 20m, 60m depending on the spectral band - all lands will be systematically observed, with a field of view of 290 km - Revisit : each land pixel is observed every fifth day with a constant viewing angle - each pixel is observed under 13 spectral bands in the visible, NIR and SWIR domains

The Sentinel-2 mission will rely on two satellites, the first of which should be launched in 2015 and the second one year after. Two years before the launch of the first satellite, no simulation data set was available to help the users to get an accurate idea of the potential of the Sentinel-2 time series. To cope with this problem, the SPOT4 (Take5) experiment was proposed by the CESBIO and implemented by CNES. It consisted in lowering SPOT4's altitude by 2 km to put it on a five days repeat cycle orbit, during a five month period in the Spring 2013. During this period, each of the 45 selected sites was observed every fifth day, 28 times in total.

The 45 data sets are aimed at helping users to learn to process the information brought by the unique set of Sentinel-2 features, among which the most unusual is the availability of repetitive observations under constant viewing angles at high resolution. Two kinds of products were delivered to the users, for which we used the nomenclature defined for Sentinel-2 : a level 1C product providing ortho-rectified images expressed in Top of Atmosphere reflectances, and a level 2A product providing the same ortho-rectified images but expressed in surface reflectance after atmospheric correction.

Together with the production of SPOT4 (Take5) products, an intensive validation campaign was set up to test the accuracy of Level 1C and Level 2A products in many aspects, such as ortho-rectification, cloud detection, atmospheric correction. This paper describes the data set and its processing, presents the obtained validation results and summarizes a few lessons learned from the experiment.

The Take5 experiment will be renewed in 2015 with SPOT5, just before the launch of the first Sentinel-2 satellite, over more than 100 sites selected based on an open call.

Biography :

Olivier Hagolle began his career in 1990 at the Centre National d'Etudes Spatiales (CNES), the French Space Agency, working on the image quality of optical remote sensing satellites, with a special interest on radiometric calibration. He is now a CNES researcher at the Centre d'Etudes Spatiales de la Biosphère (CESBIO) laboratory, specialised in cloud detection and atmospheric correction of satellites combining high spatial resolution and frequent repetitivity, such as those provided by the LANDSAT, Sentinel-2 or VENμS satellites. He is also the scientific manager of the SPOT (Take5) experiments, aimed at helping users get ready for the use of Sentinel-2 data, using the older SPOT-4 and SPOT-5 satellites.



SPECIAL SESSION : InSAR and ground deformation monitoring (Wednesday, 22, July, 14:30)

MULTI-TEMPORAL HIGH-RESOLUTION SAR FOR GEOMETRIC MEASUREMENTS AND FOR GROUND DEFORMATION MONITORING

Michael Eineder, *Remote Sensing Technology Institute, DLR, Germany*

Abstract :

The geometric accuracy and especially the phase of each pixel are unique features of SAR imagery. And these features are especially valuable when multi-temporal observations are available. Geometric distances can be measured with centimeter accuracy in detected SAR images allowing the location of scattering objects and their motion in 3 dimensions. If the phase is exploited, even sub-millimetric differences can be measured relatively between points. Furthermore, 3D point clouds can be generated from tomographic analysis of multi-baseline data stacks.

DLR is operating two high-resolution SAR satellites, TerraSAR-X and TanDEM-X in repeat-pass and in an interferometric stereo-configuration. The authors have developed methods to fully exploit the geometric accuracy of high-resolution SAR and InSAR data for a variety of applications such as :

- DEM generation,
- differential DEM analysis over vegetation and volcanos,
- imaging geodesy measurements for geodetic and for cryosphere applications,
- land subsidence and earthquake motion analysis,
- tomographic analysis of urban areas.



The talk sketches some novel methods and shows application results of high resolution TerraSAR-X and TanDEM-X data.

Biography :

Prof. Dr. Eineder is a specialist for Synthetic Aperture Radar (SAR). He has been with the German Aerospace Center (DLR) since 1990, where he is currently heading the SAR Signal Processing Department of DLR's Remote Sensing Technology Institute. Mr. Eineder has worked on a series of international SAR missions including the recent German missions TerraSAR-X and TanDEM-X. Since 2006 he has been a part-time lecturer for remote sensing with the Technische Universität München (TUM) and since 2013 he has been a TUM honorary professor. He holds 5 international patents and has published more than 230 papers, 32 of them peer reviewed.

SPECIAL SESSION : Cryosphere and global change (Thursday, 23, July, 08:40)**HOW MULTI-TEMPORAL REMOTE SENSING DATA IMPROVE OUR UNDERSTANDING OF CLIMATE CHANGE IMPACTS ON GLACIERS**

Frank Paul, *University of Zurich, Switzerland*

Abstract :

Several cryospheric components such as snow, glaciers or sea ice, react strongly to changes in climate as their existence is directly related to climatic conditions. Their changes take place over a wide range of spatial and temporal scales, resulting in related challenges in adequate monitoring and trend detection. For glaciers, only some hundred out of the 200,000 glaciers are regularly measured in the field and analysis of multi-temporal remote sensing data helped extending the measurements in space and time. Moreover, they complement the field measurements with information that would otherwise not be available. However, each of the wide range of sensors that measure glacier changes (e.g. optical and microwave imaging sensors or altimeters) has specific limitations, data processing requirements and uncertainties that need to be considered before using or comparing the products derived from them. Recently launched and upcoming sensors will continue to provide essential information on cryospheric changes.

**Biography :**

Frank Paul has a diploma in Meteorology from the University of Hamburg and a PhD in Physical Geography from the University of Zurich, where he is currently working as a senior research scientist. His research interests cover glacier mapping and monitoring from space-borne optical sensors, distributed mass balance modelling of glaciers, and geomorphometric analysis of DEMs and their applications in glaciological studies. He is currently science leader of the ESA project Glaciers_cci and was lead author in Working Group I of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

SPECIAL SESSION : Urban analysis and monitoring (Thursday, 23, July, 8:40)**URBAN ANALYSIS AND MONITORING WITH MULTI-TEMPORAL DATA: NEW CHALLENGES AND NEW TRENDS**

Florence Tupin, *Télécom ParisTech, France*

Abstract :

The recent launch of new sensors (either multi-spectral or SAR) in the past few years has raised new challenges for an efficient exploitation of the available information. The monitoring of urban areas needs reliable urban mapping and fast change detection and change evolution tools, as well as accurate 3D reconstruction (with stereo-vision or SAR interferometry) and movement monitoring (with differential SAR interferometry or 4D SAR tomography). The recent and new sensor generation like Sentinel will provide a huge amount of information with a high temporal frequency. Although having multitemporal and multisensor data increases the quantity of information, there are many challenges to fully exploit it, specially in urban areas (different incidence angles, different illumination conditions, different physical mechanisms,...). The joint exploitation of this huge, heterogeneous and fastly arriving amount of data can take benefit of recent advances in machine learning, image processing, and temporal modeling.

**Biography :**

Florence Tupin (SM'07) is currently Professor at Telecom ParisTech, France. She received the Engineer degree in 1994 and the Ph.D. degree in signal and image processing from Ecole Nationale Supérieure des Télécommunications (ENST), Paris, France in 1997. From 1997 to 1998, she worked with SAGEM on fingerprint recognition. Since november 1998, she has been Associate Professor and then Professor of signal processing and computer vision at Telecom ParisTech in the Image and Signal Processing Department. Since 2014, she has been head of the Image Processing and Interpretation group. Her research interests are image processing, analysis and interpretation, three-dimensional reconstruction, SAR imagery, for remote sensing applications and earth observation. In 2007, she was chair of the Urban Remote Sensing Joint Event held in Paris. Since 2003, she is also member of the technical committees "Pattern Recognition in Remote Sensing" of the International Association for Pattern Recognition (IAPR) and "URBAN", the biennial GRSS/ISPRS Joint Workshops on "Remote Sensing and Data Fusion over Urban Areas" from 2004-2006, CMRT (2013), GRETSI (2013, 2015), RFIA (2014). From 2005 to 2007, she was Associate Editor of the French journal "Signal Processing". She currently serves as an Associate Editor of IEEE Transactions on Geoscience and Remote Sensing.

SPECIAL SESSION : Data mining Special Session (Thursday, 23, July, 13:30)

MULTITEMPORAL DATA MINING: FROM BIOMASS MONITORING TO NUCLEAR PROLIFERATION DETECTION

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

Abstract :

Monitoring biomass over large geographic regions for identifying changes is an important task in many applications. With recent emphasis on biofuel development for reducing dependency on fossil fuels and reducing carbon emissions from energy production and consumption, the landscape of many countries is going to change dramatically in coming years. Recent studies are exploring both the economic and environmental impacts of growing energy crops. In the United States continuous corn production is becoming a dominant cropping pattern as more and more soybean and wheat rotations are replaced by continuous corn production. It is also expected that more and more pasture lands will be converted to Switchgrass in the coming years, which may positively impact climate change because of its superior carbon uptake properties. These changes are not limited to the United States alone. Developing countries like India, the rural areas are facing increasing demand for energy. It is expected that energy crops like *Jatropha curcas* are going to be widely planted in Asian countries. Recent FAO report [Richard, 2010] indicates a threefold increase in the area planted to *Jatropha* from 4.72 million ha in 2010 to 12.8 million ha by 2015. Therefore there is a great need to monitor biomass (both crop and forest) at regional and global scales.



On the other hand, accurate damage assessment due to major natural and anthropogenic disasters is becoming critical due to increasing human and economic losses. This increase in loss of life and severe damages can be attributed to the growing population, and human migration and settlements in disaster prone regions of the world. Rapid damage assessment and dissemination of accurate information is critical for creating an effective emergency response. Remote sensing and geographic information systems (GIS) based techniques and tools are playing an important function in disaster damage assessment and reporting activities. Remote sensing data plays a critical role in disaster mapping of human settlements, which range from delineation of effected population areas to the assessment of structural damages to buildings and critical infrastructures. The study reported in [Showalter, 2001], shows that remote sensing technology has been most widely utilized in mapping and monitoring of hazards and identification of damages and effects of disasters. Remote sensing is also useful in (near) real time assessment of damages due to floods, forest fires, and other temporal phenomena.

We present recent advances in data mining and machine learning approaches for analyzing multitemporal remote sensing imagery. In particular, the following topics: (i) multitemporal classification using co-training, (ii) multiresolution object-based change analysis (MOCA), (iii) Gaussian Process (GP) based change prediction, and (iv) semantic classification, along with applications in biomass and critical infrastructure (Nuclear/Thermal) monitoring will be presented.

Biography :

Raju Vatsavai joined the Department of Computer Science at the North Carolina State University in August 2014 as a Chancellor's Faculty Excellence Program Cluster Associate Professor in Geospatial Analytics. Raju is an interdisciplinary scientist known for innovative contributions to large scale spatial and spatiotemporal data management and spatial data mining. His overarching geospatial analytics research spans big data management, data mining, and high performance computing with applications in national security, geospatial intelligence, natural resources, climate change, location-based services, and human terrain mapping. As the associate director of the Center for Geospatial Analytics, Raju plays a leadership role in developing and executing the strategic vision for spatial computing research. A leader in the field, Raju is passionate about understanding the world through (high-) resolution, dimensional, and temporal images by developing innovative and computationally efficient algorithms.

Prior to joining the NC State, Raju was the Lead Data Scientist for the Computational Sciences and Engineering Division of the Oak Ridge National Laboratory (ORNL). He came to NC State with more than 20 years of research and development experience in large-scale data management and knowledge discovery by working at the University of Minnesota, IBM-Research, AT&T Labs and the Center for Development of Advanced Computing (C-DAC, India). He has authored or co-authored over 75 publications in archival journals and leading international conferences. He has been a leading investigator on numerous research grants from the National Geospatial Intelligence Agency, the Department of Energy, and the Department of Homeland Security, which have resulted in novel solutions for monitoring the Earth at global scales using very high-resolution remote sensing imagery. He holds MS and PhD degrees in computer science from the University of Minnesota.

SPECIAL SESSION : Inverse Problems and Data Assimilation (Thursday, 23, July, 13:30)**DATA ASSIMILATION: A BRIEF OVERVIEW**

Olivier Talagrand, *Laboratoire de Météorologie Dynamique, IPSL, École Normale Supérieure, Paris, France*

Abstract :

Data Assimilation, in the form in which it is gradually propagating to more and more different fields of application, originated from the need of defining initial conditions for numerical weather forecasts. It aims at reconstructing as accurately as possible the state of an evolving system, using observations that are distributed in time, and may be incomplete at any time, and of varying nature and accuracy.

Data Assimilation is probably best described as a problem in Bayesian estimation: determine the probability distribution for the state of the observed system, conditioned by the available data.

Three broad classes of algorithms are at present used, or at least actively studied, in that context. Variational Assimilation, Ensemble Kalman Filters and Smoothers, and Particle Filters. These algorithms, which can all be described as providing an approximate solution to the general Bayesian problem, are presented. Their properties are discussed, both from a theoretical and a more practical point of view.

**Biography :**

Olivier Talagrand is Emeritus Senior Research Scientist (Directeur de Recherches) at Centre National de la Recherche Scientifique, and works at Laboratoire de Météorologie Dynamique in Paris. His interests are in numerical modelling of the atmospheres of the Earth and the terrestrial planets. He has worked particularly on assimilation of meteorological observations, to the theory of which he has contributed in many respects, in particular through the development of variational methods for assimilation ('4D-Var'). He has also done work on numerical weather prediction, predictability of the atmosphere and methods for statistical prediction. And he has contributed to the development and validation of numerical models of the atmospheric circulation of terrestrial planets (Mars, Venus and Titan)

SPECIAL SESSION : Multisource data for ecosystem monitoring (Thursday, 23, July, 15:50)

EVALUATING THE TEMPORAL STABILITY OF SYNTHETICALLY GENERATED TIME-SERIES FOR CROP TYPES IN CENTRAL GERMANY

Michael Förster, *Technische Universität Berlin, Geoinformation in Environmental Planning Lab, Germany*

Abstract :

Synthetically generated Landsat time-series based on the STARFM algorithm are increasingly used for applications in forestry or agriculture. Although successes in classification and derivation of phenological or biomass parameters are evident, a thorough evaluation on the limits of the method is still needed. It is already known that a more complex landscape creates higher prediction uncertainty for spatiotemporal fusion applications. Especially agricultural crops have a broad variety of different spectral-temporal variations. Therefore, a class-wise evaluation of the temporal stability of crop classes could significantly increase the knowledge about the applicability of this type of fusion algorithms.

The presented study is evaluating a typical synthetic Landsat time-series derived from MODIS terra daily products of an intensively agriculturally cultivated area in Germany in 2011. The derived NDVI product was compared to RapidEye imagery for the 12 most commonly used agricultural classes in the area.



Biography :

Michael Förster was born in 1975 (Burgstädt, Saxony, Germany). He received his Diploma degree (Geo-ecology) from the University of Potsdam, Germany, in 2003, and his Ph.D degree from the Technische Universität Berlin, Germany, in 2009. He is currently working as an Assistant Professor at the Technische Universität Berlin, Institute of Landscape Architecture and Environmental Planning, Geoinformation in Environmental Planning Lab. His main interests are the analysis of multi-temporal and hyperspectral imagery for vegetation applications.

SPECIAL SESSION : Disaster Assessment Special Session (Thursday, 23, July, 15:50)**INTERNATIONAL CHARTER 'SPACE AND MAJOR DISASTERS' AND RAPID MAPPING PRODUCTS**

Stéphane May, CNES, France

Abstract :

The International Charter 'Space and major disasters' is a worldwide collaboration between 15 space agencies aimed at offering satellite data in the event of major disasters. The Charter has put its satellites in operation for disaster management more than 450 times and for more than 110 countries. As a major disaster occurs, the Charter is activated. Then satellites are tasked, satellite images are acquired, and damage maps are performed. The information are immediately transmitted to the rescue teams and Government authorities. Examples of activations will be presented as the hurricane Sandy in Haiti in 2012 or the earthquake in Nepal in 2015. Rapid mapping operational constraints explain why human analysis is preferred to the use of automatic processing tools.

**Biography :**

Stéphane May is a research engineer at CNES, the French space agency. He has a recognized expertise on the processing tools of high and very high resolution optical remote sensing data : geometric and radiometric corrections for the Kalideos processing chains, work on DTM extraction with stereo images (as Spot 5 P+XS images), development of the emergency rapid mapping algorithms for the FP7 GMES/SAFER project : images registration, change detection using sequences of images or pair of images, detection/classification of buildings or other man-made features, development of segmentation algorithms for the production of land use land cover thematic maps. He is now in charge of R&D activities related to hyperspectral remote sensing data (fusion, unmixing, classification algorithms), and extraction and use of salient elements into images. He also has the expertise in operating sensors and platforms.

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 very 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.

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