

Programme Agenda

Day 1 - 10/05/2023

Big Hall

Registration

08:45 - 09:30

Opening Session (S1)

Chairs: Ana Isabel Bolea Alamaac, ESA/ESTEC, Michel F. Massart, European Commission

09:30 - 11:00



09:30-09:35 | Welcome

Presenting author: Floberghagen, Rune

Floberghagen, Rune, European Space Agency (ESA/ESRIN)



09:35-09:45 | Workshop Objectives

Presenting author: Koetz, Benjamin

Koetz, Benjamin; Ottavianelli, Giuseppe, European Space Agency (ESA/ESRIN)



09:45-10:00 | FAO keynote

Presenting author: Peiser, Livia

Peiser, Livia, FAO



10:00-10:20 | TRISHNA: towards daily evapotranspiration from remote sensing thermal data

Presenting author: Gamet, Philippe

Gamet, Philippe (1,2); Marcq, Sébastien (1); Delogu, Emilie (1); Binet, Renaud (1); Boulet, Gilles (2,3); Olioso, Albert (4); Roujean, Jean-Louis (2); Bhattacharya, Bimal (5); Maisongrande, Philippe (1), 1: CNES, France; 2: CESBIO, France; 3: IRD, France; 4: INRAE, France; 5: SAC/ISRO, India



10:20-10:40 | ECOSTRESS, SBG AND HYTES – STATUS AND RESULTS

Presenting author: Hook, Simon

Hook, Simon, NASA/JPL, United States of America



10:40-11:00 | LAND SURFACE TEMPERATURE MONITORING (LSTM) MISSION

Presenting author: Koetz, Benjamin

Koetz, Benjamin, ESA - ESRIN, Italy

Discussion and Recommendations

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11:00 - 11:15

Coffee Break

11:15 - 11:45

1.2 Harmonisation of international missions (S2)

Chairs: Philippe Gamet, CNES, Simona Zoffoli, Italian Space Agency

11:45 - 13:00



11:45-12:00 | LSTM Level-1 processing chain

Presenting author: Almodovar, David

Almodovar, David; González, Fernando; Alvarez, Oriol; Cortez, David, Airbus Defence and Space S.A.U.



12:00-12:15 | U.S.-Italy Surface Biology and Geology (SBG)-Thermal Infrared (TIR) Joint Project

Presenting author: Basilio, Ralph R

Basilio, Ralph R (1); Zoffoli, Simona (2); Hook, Simon J (1); Buongiorno, Maria Fabrizia (3), 1: Jet Propulsion Laboratory/California Institute of Technology, United States of America; 2: Agenzia Italiana Spaziale (ASI), Italy; 3: Istituto Nazionale di Geofisica e Vulcanologia, Italy



12:15-12:30 | TRISHNA downstream activities

Presenting author: Leroux, Delphine

Leroux, Delphine; Gamet, Philippe; Maisongrande, Philippe; Salcedo, Corinne; Carlier, Thierry, CNES, France



12:30-12:45 | Improving continuous monitoring of evapotranspiration by combining data from future thermal infrared missions

Presenting author: Oliosio, Albert

Oliosio, Albert (1); Carrire, Simon (2,3); Gamet, Phillipe (4); Delogu, Emilie (4); Weiss, Marie (3); Guillevic, Pierre (5); Demarty, Jérôme (6); Etchanchu, Jordi (6); Boulet, Gilles (7), 1: URFM, INRAE, Avignon, France; 2: METIS, Sorbonne Université, UPMC, CNRS, EPHE, Paris, France; 3: EMMAH, INRAE/UAPV, Avignon, France; 4: CNES, Toulouse, France; 5: Planet Labs, Haarlem, The Netherlands; 6: HSM, IRD, CNRS, Université de Montpellier, Montpellier, France; 7: CESBIO, Université de Toulouse, CNES, CNRS, INRAE, IRD, UT3, Toulouse, France



12:45-13:00 | THE USE OF HIGH-RESOLUTION THERMAL EARTH OBSERVATION SENSORS IN THE SECURITY AND OTHER INTERCONNECTED DOMAINS

Presenting author: Lazzarini, Michele

Lazzarini, Michele; Barrilero, Omar; Luna, Adrian; Saameno, Paula; Albani, Sergio, European Union Satellite Centre, Spain

Discussion and Recommendations

13:00 - 13:15

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Lunch

13:15 - 14:30

1.3 New Space for Thermal EO (S3)

Chairs: Ferran Gascon, ESA, Zhuoting Wu, USGS

14:30 - 15:50



14:30-14:40 | HiVE – A micro-satellite constellation towards Global Water Monitoring for a growing planet – Data Products and Processing

Presenting author: Brunn, Andreas

Brunn, Andreas (1); Humayun, Mohammed Imaduddin (1); Freedman, Ellis (1); Wolters, Erwin (1); Rainot, Alan (1); Zhang, Tianran (1); Benvenuto, Riccardo (1); Bierdel, Marius (1); Bouwer, Philip (2); Bouffard, Jean-Sebastien (2); Ait-Mohammed, Nori (3); Di Vito, Piera (3); Castorina, Michele (3); Borghi, Giuseppe (3), 1: ConstellIR, Germany; 2: Pinkmatter, South Africa; 3: ESA ESRIN, Italy



14:40-14:50 | Calibration and Validation of FOREST-2: Precursor for a Large Constellation of TIR Imagers

Presenting author: Seifert, Marc

Seifert, Marc; Spichtinger, Andrea; Rio Fernandes, Diogo; Gottfriedsen, Julia; Mollire, Christian; Langer, Martin, OroraTech GmbH, Germany



14:50-15:00 | Onboard Calibration and Uncertainty Budget for the Hydrosat Longwave Infrared Imager

Presenting author: Lalli, Kevin

Lalli, Kevin; Kleynhans, Tania; Soenen, Scott, Hydrosat Inc., United States of America



15:00-15:10 | Game changing High Resolution Mid Wave Infrared constellation from Satellite Vu

Presenting author: Reinicke, Tobias

Reinicke, Tobias (1); Haslehurst, Andrew (2), 1: Global Satellite Vu, Ltd.; 2: Surrey Satellite Technology Ltd.



15:10-15:20 | Unfolding, self-aligning thermal-infra red space telescopes for high resolution Earth Observations

Presenting author: Parry, Ian

Parry, Ian; Hawker, George; Gomez-Jenkins, Marco; Jennings, Jon; Gonzalez, Sergio, SuperSharp Space Systems Ltd, United Kingdom



15:20-15:30 | INTRODUCING THE EARTHDAILY CONSTELLATION, A SCIENTIFIC-GRADE EARTH OBSERVATION MISSION WITH DAILY REVISIT TIME

Presenting author: Clenet, Harold

Quesney, Arnaud; Clenet, Harold; Allies, Aubin; Durand, Alexis; Gevaert, Caroline; Glynn, Bevan; Karasiak, Nicolas; Peyrard, Clément; Uehara, Tatiana; Walsh, Luisa; Huby, Guillaume; Tartarin, Cécile, EarthDaily Agro, France



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15:30-15:40 | Land surface temperature retrieval from the synergy of passive microwave, optical and thermal observations

Presenting author: Malbeteau, Yoann

Malbeteau, Yoann; Dijkstra, Jasper; Guillevic, Pierre; Schellekens, Jaap; De Jeu, Richard De Jeu, Planet Labs



15:40-15:50 | Thermal SmallSats for Gapfilling Agricultural Information Services

Presenting author: Bastiaanssen, Wim G.M.

Bastiaanssen, Wim G.M. (1,2); Bachour, Roula (1); Dalby, Royce (3); Fisher, Joshua (3), 1: IrriWatch, Netherlands, The; 2: Delft University of Technology, Netherlands, The; 3: Hydrosat, USA

Discussion and Recommendations

15:50 - 16:00

Coffee Break

16:00 - 16:20

1.4 Algorithm development (S4)

Chairs: Itziar Barat, ESA, Jean-Louis Roujean, CESBIO

16:20 - 17:50



16:20-16:35 | Thermal InfraRed Anisotropy Measurements in India and Southern eUrope (TIRAMISU) project in preparation of the TRISHNA mission

Presenting author: Roujean, Jean-Louis

Roujean, Jean-Louis (1); Pinnepalli, Chandrika (1); Irvine, Mark (2), 1: CESBIO; 2: INRAE



16:35-16:50 | Anisotropy corrections for thermal infrared satellite imaging

Presenting author: Snyders, Louis

Snyders, Louis (1,2); Blommaert, Joris (1,2); Leon Tavares, Jonathan (1), 1: VITO; 2: Free University of Brussels



16:50-17:05 | Assessment of methods for Land Surface Temperature retrieval from future high-resolution thermal missions

Presenting author: Sobrino, Jose A.

Sobrino, Jose A.; Skokovic, Drazen; Llorens, Rafael; Jimenez, Juan C.; Sun, Yingwei, University of Valencia, Spain



17:05-17:20 | TRISHNA Surface Temperature and Emissivity Retrievals: comparison of multiple algorithms

Presenting author: Delogu, Emilie

Delogu, Emilie (1); Vidal, Thomas (2); Marcq, Sebastien (1); Chapelier, Morgane (1); Meygret, Aimé (1), 1: CNES, France; 2: ACRI-ST, France



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17:20-17:35 | 40 years of Landsat thermal infrared Earth observations with a look ahead

Presenting author: Crawford, Christopher

Arab, Saeed (1); Crawford, Christopher (2); Hulley, Glynn (3); Wu, Zhuoting (4); Neigh, Christopher (5), 1: KBR, Contractor to the Geological Survey, Earth Resources Observation and Science Center, Sioux Falls, SD 57198, USA; 2: U.S. Geological Survey, Earth Resources Observation and Science Center, Sioux Falls, SD 57198, USA; 3: Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109, USA; 4: U.S. Geological Survey, Office of Land Remote Sensing, Flagstaff, AZ 86001, USA; 5: Biospheric Sciences Laboratory, NASA Goddard Space Flight Center, Greenbelt, MD 20771, USA



17:35-17:50 | SIMULATING SBG WITH ECOSTRESS AND EMIT

Presenting author: Hook, Simon

Hook, Simon; Green, Robert; Cawse-Nicholson, Kerry; Thompson, David; Brodrick, Philip, NASA/JPL, United States of America

Discussion and Recommendations

17:50 - 18:00

Day 2 - 11/05/2023

BIG HALL

2.1 Agriculture - irrigation, evapotranspiration (S5)

Chairs: Philippe Maisongrande, CNES, Kerry Cawse-Nicholson, Jet Propulsion Laboratory

09:30 - 11:00



09:30-09:45 | Consort of Conductances: The Missing Biophysical Link in Thermal Remote Sensing of Terrestrial Evaporation and Inclusion for the Future LST Missions

Presenting author: Mallick, Kaniska

Mallick, Kaniska (1,2); Baldocchi, Dennis (2); Hu, Tian (1); Wang, Tianxin (2); Verfaillie, Joseph (2); Szutu, Daphne (2); Boulet, Gilles (3); Oliosio, Albert (4); Gamet, Philippe (3); Roujean, Jean-Louis (3); Sulis, Mauro (1); Hitzelberger, Patrik (1); Bossung, Christian (1); Corbari, Chiara (5); Mancini, Marco (5); Nieto, Hector (6); Bhattarai, Nishan (7); Szantoi, Zoltan (8,9); Bhattacharya, Bimal (10); Hulley, Glynn (11); Campbell, Madeleine Pascolini (11); Nicholson, Kerry Cawse (11); Hook, Simon (11), 1: Department ERIN, Luxembourg Institute of Science and Technology, Belvaux, Luxembourg; 2: University of California Berkeley, CA, United States; 3: Centre d'Etudes Spatiales de la Biosphère, CNES, CNRS, INRAE, IRD, UPS, Toulouse 31401, France; 4: Unité de Recherche écologie des Forts Méditerranéennes, INRAE, Avignon, France; 5: Department of Civil and Environmental Engineering, Politecnico di Milano, Milan, Italy; 6: Institute of Agricultural Sciences - CSIC, Tec4AGRO Group, Serrano, Madrid; 7: Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, Oklahoma 73019, USA; 8: Science, Applications & Climate Department, European Space Agency, Frascati 00044, Italy; 9: Stellenbosch University, Stellenbosch 7602, South Africa; 10: Biological and Planetary Sciences and Applications Group, Space Applications Center, ISRO, Ahmedabad, India; 11: Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California 91109, USA



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09:45-10:00 | Assessing the High-Resolution Evapotranspiration constrained by disaggregated land surface temperature

Presenting author: Ait Hssaine, Bouchra

Ait Hssaine, Bouchra (1); Elfarkh, Jamal (2); Amazirh, Abdelhakim (1); Chehbouni, Abdelghani (1), 1: Center for Remote Sensing Applications; 2: Water Desalination and Reuse Center, King Abdullah University of Science and Technology, 23955 Thuwal, Saudi Arabia



10:00-10:15 | Continuous monitoring of crop water use and productivity by fusing ECOSTRESS, PRISMA and Sentinels as part of the EOAfrica's Explorers initiative

Presenting author: Nieto Solana, Héctor

Nieto Solana, Héctor (1); Martín, M. Pllar (1); Burchard-Levine, Vicente (1); Gusinski, Radoslaw (2); Munk, Michael (2); Ghent, Darren (3); Perry, Mike (3); Majoz, Nobuhle (4); Ramoelo, Abel (5); Sawadogo, Alidou (6); Dikgola, Kobamelo (7), 1: AECSIC, Spain; 2: DHI, Denmark; 3: University of Leicester, UK; 4: CSIR, Council for Scientific and Industrial Research, South Africa; 5: Centre for Environmental Studies, University of Pretoria, South Africa; 6: Ministre de l'Agriculture, des Ressources Animales et Halieutiques du Burkina Faso, Burkina Faso; 7: Ministry of Lands and Water Affairs of the Republic of Botswana, Botswana



10:15-10:30 | Potential of Sentinel-3 LST downscaling for estimating evapotranspiration from two-source energy balance model at sub-kilometer spatial resolution

Presenting author: Bartkowiak, Paulina

Bartkowiak, Paulina; Castelli, Mariapina; Notarnicola, Claudia, Eurac Research, Institute for Earth Observation, Bolzano, Italy



10:30-10:45 | Simulating high spatial-temporal land surface temperature at scale

Presenting author: Zalite, Karlis

Pelgrum, Henk; Zalite, Karlis; Wonink, Steven; Klaasse, Annemarie, eLEAF, Netherlands, The



10:45-11:00 | Evapotranspiration mapping from remote sensing data: uncertainties and ensemble estimates based on multimodel – multidata simulations

Presenting author: Olioso, Albert

Olioso, Albert (1,2); Allies, Aubin (3,4); Desrutins, Hugo (2); Carrire, Simon (5,2); Farhani, Nesrine (4); Sobrino, José (6); Skokoviæ, Drazen (6); Demarty, Jérôme (4); Etchanchu, Jordi (4); Boulet, Gilles (7); Buis, Samuel (2); Weiss, Marie (2), 1: URFM, INRAE, Avignon, France; 2: EMMAH, INRAE/UAPV, Avignon, France; 3: EarthDaily Agro, Balma, France; 4: HSM, IRD, CNRS, Université de Montpellier, Montpellier, France; 5: UMR METIS, Sorbonne Université, UPMC, CNRS, EPHE, Paris, France; 6: Global Change Unit, Image Processing Laboratory, University of Valencia, Valencia, Spain; 7: CESBIO, Université de Toulouse, CNES, CNRS, INRAE, IRD, UT3, Toulouse, France

Discussion and Recommendations

11:00 - 11:10

Coffee Break

11:10 - 11:40

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2.2 Agriculture - irrigation, evapotranspiration (2) (S6)

Chairs: Radoslaw Guzinski, DHI, Raphaël d'Andrimont, European Commission, Joint Research Centre

11:40 - 13:10



11:40-11:55 | WaPOR v3 –ETLook evapotranspiration from field to global scale

Presenting author: Wonink, Steven

Klaasse, Annemarie; Pelgrum, Henk; Wonink, Steven; Zalite, Karlis, eLEAF, Netherlands, The



11:55-12:10 | Assessing Moisture Adequacy over Semi-arid and Arid Indian Agricultural Farms using High-Resolution Thermography

Presenting author: Bhattacharya, Bimal Kumar

Bhattacharya, Bimal Kumar (1); Desai, Devansh (2), 1: Space Applications Centre, ISRO, India; 2: Department of Physics, Silver Oak University, Ahmedabad, India



12:10-12:25 | High-resolution thermal imagery holds critical plant physiological information: lessons learned on water stress and disease detection using airborne platforms

Presenting author: Zarco-Tejada, Pablo J.

Zarco-Tejada, Pablo J. (1,2); Gonzalez-Dugo, Victoria (2); Poblete, Tomas (1); Camino, Carlos (3); Calderon, Rocio (4); Hornero, Alberto (2,1); Hernandez-Clemente, Rocio (5); Landa, Blanca B. (2); Navas-Cortes, Juan A. (2), 1: University of Melbourne, Australia; 2: Instituto de Agricultura Sostenible (IAS), Consejo Superior de Investigaciones Cientificas (CSIC), Spain; 3: European Commission (EC), Joint Research Centre (JRC); 4: University of Cornell, Ithaca, NY, USA; 5: Universidad de Cordoba, Spain



12:25-12:40 | EO Africa Water Management: a support to farmers and planners to improve irrigation water management.

Presenting author: Eze, Gabriel

Abdelmoneim, Ahmed Ali Ayoub (2); Bendary, Hosam (5); De Pasquale, Vito (1); Deflorio, Anna Maria (1); Derardja, Bilal (2); El-Shirbeny, Mohammed (4); Grigoriadis, Dionisis (3); Ieronymaki, Maria (3); Ieronymidi, Emmanouela (3); Khadra, Roula (2); Valsamidis, Theophilos (3); Volden, Espen (6); Eze, Gabriel (1), 1: Planetek Italia - Via Massaua 12, 70132 Bari Italy; 2: CIHEAM Bari (International Center for Advanced Mediterranean Agronomic Studies - Mediterranean Agronomic Institute of Bari) - Via Ceglie, 9, 70010 Valenzano BA; 3: Planetek Hellas - 44 Kifisias Avenue, 15125 Marousi, Athens, Greece; 4: National Authority for Remote Sensing and Space Sciences, Cairo (NARSS) - 23 Joseph Broz Tito Street, El-Nozha El-Gedida, Cairo, Egypt; 5: Sixth of October for Agricultural Projects company (OSAP); 6: European Space Agency (ESA) - Espen.Volden @esa.int



12:40-12:55 | Integration of thermal and optical models for mapping crop evapotranspiration in California

Presenting author: Belfiore, Oscar Rosario

Belfiore, Oscar Rosario (1); Knipper, Kyle R. (2); Kustas, William P. (3); Bambach-Ortiz, Nicolas (4); McElrone, Andrew J. (5,6); Castro, Sebastian J. (6); Prueger, John H. (7); Bhattarai, Nishan (8); Hipps, Lawrence E. (9); Alfieri, Joseph G. (3); D'Urso, Guido (1), 1: Department of Agricultural Sciences, University of Naples Federico II, Portici, ITALY; 2: USDA, ARS, Sustainable Agricultural Water Systems Unit, Davis, CA, USA; 3: USDA, ARS, Hydrology and Remote Sensing Lab, Beltsville, MD, USA; 4: University of California, Davis, Department of Land, Air, and Water Resources, Davis, CA; 5: USDA, ARS Crops Pathology and Genetics Lab, Davis, CA, USA; 6: University of California, Davis,

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Department of Viticulture and Enology, Davis, CA, USA; 7: USDA-ARS, National Laboratory for Agriculture and the Environment, Ames, IA, USA; 8: Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK, USA; 9: Department of Plants Soils and Climate, Utah State University, Logan, UT, USA



12:55-13:10 | Retrieving Evapotranspiration based on realistic LST canopy distribution using Surface Energy Budget models in forward and inverse modes

Presenting author: Boulet, Gilles

Boulet, Gilles (1); Mwangi, Samuel (1); Sassi, Mohamed Zied (1); Olioso, Albert (2,3); Mallick, Kanishka (4,5); Rajasekaran, Eswar (6); Dutta, Debsunder (7), 1: CESBIO, Université de Toulouse, CNES, CNRS, INRAE, IRD, UT3, Toulouse, France; 2: EMMAH, INRAE/UAPV – UMR1114, Avignon, France; 3: INRAE/URFM, INRAE, Avignon, France; 4: Department of Environmental Research and Innovation, Luxembourg Institute of Science and Technology, Belvaux, Luxembourg; 5: Department of Environmental Science, Policy and Management, University of California Berkeley, California, United States; 6: Dept of Civil Engineering, Indian Institute of Technology Bombay, Powai, India; 7: Dept of Civil Engineering, Indian Institute of Science, Bangalore, India

Discussion and Recommendations

13:10 - 13:20

Lunch

13:20 - 14:30

2.3 Ecosystem & Coastal (S7)

Chairs: Emmanuelle AUTRET, IFREMER, Gilles Boulet, IRD

14:30 - 16:00



14:30-14:45 | European ECOSTRESS Hub Phase 2: Thermal Infrared Remote Sensing of Terrestrial Ecosystem Processes

Presenting author: Hu, Tian

Hu, Tian (1); Mallick, Kaniska (1); Hitzelberger, Patrick (2); Didry, Yvonne (2); Szantoi, Zoltan (3,4); Boulet, Gilles (5); Olioso, Albert (6); Hulley, Glynn C. (7); Nieto, Hector (8); Roujean, Jean-Louis (5); Gamet, Philippe (5); Campbell, Madeleine Pascolini (7); Nicholson, Kerry Cawse (7); Hook, Simon (7), 1: Department of Environmental Research and Innovation, Luxembourg Institute of Science and Technology, Belvaux, Luxembourg; 2: Department of IT for Innovative Services, Luxembourg Institute of Science and Technology, Belvaux, Luxembourg; 3: Science, Applications & Climate Department, European Space Agency, Frascati, Italy; 4: Stellenbosch University, Stellenbosch, South Africa; 5: Centre d'Etudes Spatiales de la Biosphère, CNES, CNRS, INRA, IRD, UPS, Toulouse, France; 6: Unité de Recherche écologie des Forts Méditerranéennes, INRAE, Avignon, France; 7: Jet Propulsion Laboratory, California Institute of Technology, California, USA; 8: Institute of Agricultural Sciences - CSIC, Tec4AGRO Group, Serrano, Madrid, Spain



14:45-15:00 | A Thermodynamic Basis for Thermal Remote Sensing: The theory and application to Natural and Managed Ecosystems Productivity

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Presenting author: Luvall, Jeffrey C

Luvall, Jeffrey C (1); Hamberg, L. Jonas (2); Fraser, Roydon A (3); Alzaben, Heba (3), 1: NASA Marshall Space Flight Center, United States of America; 2: University of Toronto; 3: University of Waterloo



15:00-15:15 | Quantifying directional effects of land surface temperature in forests: an experimental approach across scales

Presenting author: Adams, Jennifer Susan

Adams, Jennifer Susan (1); Damm, Alexander (1,2); Naegeli, Kathrin (1), 1: Department of Geography, University of Zurich, Winterthurerstrasse 190, 8057 Zurich, Switzerland; 2: Department Surface Waters – Research and Management, Eawag, Swiss Federal Institute of Aquatic Science and Technology, Ueberlandstrasse 133, 8600 Duebendorf, Switzerland



15:15-15:30 | GHR SST science team needs for high resolution sea surface temperature missions

Presenting author: Hyer, Jacob

Hyer, Jacob (1); O'Carroll, Anne (2); Karagali, Ioanna (1); Bearzotti, Chiara (1), 1: Danish Meteorological Institute, Denmark; 2: EUMETSAT



15:30-15:45 | High Resolution Sea Surface Temperature From ECOSTRESS

Presenting author: Wethey, David S.

Wethey, David S. (1); Weidberg, Nicolas (2); Vazquez, Jorge (3); Woodin, Sarah A. (1), 1: University of South Carolina, Columbia, SC, USA; 2: Universidad de Oviedo, Oviedo, Spain; 3: NASA Jet Propulsion Laboratory, Pasadena, CA, USA



15:45-16:00 | Designing new ultra high resolution Sea Surface Temperature products in coastal areas for the future TRISHNA mission

Presenting author: Orgambide, Laura

Orgambide, Laura (1); Autret, Emmanuelle (1); Saux-Picart, Stéphane (2); Paul, Eléa (1); Piolle, Jean-François (1), 1: Ifremer, France; 2: Météo-France, France

Discussion and Recommendations

16:00 - 16:10

Coffee Break

16:10 - 16:40

2.4 Urban Heat & Cryosphere (S8)

Chairs: Glynn Hulley, NASA Jet Propulsion Laboratory, Jose A. Sobrino, University of Valencia

16:40 - 18:10



16:40-16:55 | High resolution thermal imaging of urban heat islands and heat waves

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Presenting author: Hulley, Glynn

Hulley, Glynn; Shreevastava, Anamika; La, Tinh, NASA Jet Propulsion Laboratory, United States of America



16:55-17:10 | Combined use of DART and SOLENE-microclimat to investigate the impact of urban surface characteristics on LST estimations

Presenting author: Roupioz, Laure

Roupioz, Laure (1); Lauret, Nicolas (2); Rodler, Auline (3); Musy, Marjorie (3); Gastellu Etchegorry, Jean-Philippe (2); Briottet, Xavier (1), 1: ONERA, DOTA, Toulouse University, Toulouse, France; 2: CESBIO, Toulouse University (CNRS, CNES, IRD, UPS), Toulouse, France; 3: Equipe de recherche BPE CEREMA, Nantes, France



17:10-17:25 | An urban energy balance-guided machine learning approach for synthetic nocturnal surface Urban Heat Island prediction: A heatwave event in Naples

Presenting author: Oliveira, Ana

Oliveira, Ana (1); Lopes, António (2); Niza, Samuel (3); Soares, Amílcar (4), 1: CoLAB +ATLANTIC, Portugal; 2: Centro de Estudos Geográficos, IGOT - Instituto de Geografia e Ordenamento do Território, Universidade de Lisboa, Portugal; 3: IN+ Center for Innovation, Technology and Policy Research, Instituto Superior Técnico, Universidade de Lisboa, Portugal; 4: CERENA, Instituto Superior Técnico, Universidade de Lisboa, Portugal



17:25-17:40 | A study on the diurnal land surface temperature cycle during a warmer and a cooler year using high spatial resolution Land Surface Temperature data.

Presenting author: Sara, Kukku

Sara, Kukku (1); Rajasekaran, Eswar (1,2), 1: Department of Civil Engineering, Indian Institute of Technology Bombay, Mumbai, India; 2: Interdisciplinary Program in Climate Studies, Indian Institute of Technology Bombay, Mumbai, India



17:40-17:55 | Monitoring snow processes and snow density by thermal inertia

Presenting author: Colombo, Roberto

Colombo, Roberto (1); Garzonio, Roberto (1); Di Mauro, Biagio (2); Cogliati, Sergio (1); Rossini, Micol (1); Maltese, Antonino (3); Giardino, Claudia (4); Pogliotti, Paolo (5); Cremonese, Edoardo (5), 1: Universit Milano Bicocca, Italy; 2: National Research Council, Institute of Polar Sciences, Italy; 3: University of Palermo, Palermo, Italy; 4: National Research Council, Institute for Electromagnetic Sensing of the Environment, Italy; 5: Environmental Protection Agency of Aosta Valley, Italy



17:55-18:10 | Towards a better understanding of snow surface temperature variability in mountain regions

Presenting author: Arioli, Sara

Arioli, Sara (1); Arnaud, Laurent (1); Picard, Ghislain (1); Gascoin, Simon (2); Alonso-González, Esteban (2); Robledano-Perez, Alvaro (1); Poizat, Marine (1), 1: Université Grenoble Alpes, CNRS, INRAE, IRD, Grenoble INP, IGE, 38000 Grenoble, France; 2: CESBIO, Université de Toulouse, CNES/CNRS/IRD/UPS/INRAE, Toulouse, France

Discussion and Recommendations

18:10 - 18:20

Programme Agenda

Day 3 - 12/05/2023

BIG HALL

3.1 Calibration & Algorithms (S9)

Chairs: Steffen Dransfeld, European Space Agency, Maria Fabrizia Buongiorno, Istituto Nazionale di Geofisica e Vulcanologia

09:00 - 10:30



09:00-09:15 | Infrared emissivity estimation from VIS-NIR reflectances by neural network learning compair to TES approach in TRISHNA-mission context

Presenting author: Rivalland, Vincent

Rivalland, Vincent (1); Vidal, Thomas (2); Olioso, Albert (3); Briottet, Xavier (4), 1: CESBIO - CNRS, France; 2: ACRI-ST, France; 3: INRAE, France; 4: ONERA, France



09:15-09:30 | Deep learning for the detection of volcanic thermal anomalies from satellite images

Presenting author: Amato, Eleonora

Amato, Eleonora (1,2); Corradino, Claudia (1); Cariello, Simona (1,3); Torrisi, Federica (1,3); Del Negro, Ciro (1), 1: Istituto Nazionale di Geofisica e Vulcanologia, Sezione di Catania, Osservatorio Etneo, 95125 Catania, Italy; 2: Department of Mathematics and Computer Science, University of Palermo, 90123 Palermo, Italy; 3: Department of Electrical, Electronic and Computer Engineering, University of Catania, 95125 Catania, Italy



09:30-09:45 | LSTM Mission Performance Consolidation

Presenting author: Perry, Mike

Perry, Mike (1,2); Ghent, Darren (1,2), 1: University of Leicester, United Kingdom; 2: National Centre for Earth Observation



09:45-10:00 | TRISHNA Cal/Val activities: preparatory studies

Presenting author: Irvine, Mark Rankin

Irvine, Mark Rankin (1); Roujean, Jean-Louis (2); Boulet, Gilles (2); Autret, Emmanuelle (2); Coudret, Benoit (3); Rivalland, Vincent (2); Michel, Julien (2); Dick, Arthur (4); Gamet, Philippe (2,4), 1: INRAE, France; 2: CESBIO, France; 3: Ifremer, France; 4: CNES, France



10:00-10:15 | ITALIAN SITES FOR CAL/VAL ACTIVITIES FOR NEW THERMAL SPACE MISSIONS

Presenting author: Musacchio, Massimo

Musacchio, Massimo; Romaniello, Vito; Silvestri, Malvina; Buongiorno, Maria Fabrizia; Rabuffi, Federico, Istituto Nazionale di Geofisica e Vulcanologia, Italy



10:15-10:30 | New Instrumented Site for Future Thermal Infrared Missions Calibration and Validation

Presenting author: Marcq, Sébastien

Dick, Arthur (1); Marcq, Sébastien (1); Emilie, Delogu (1); Hook, Simon (2); Rivera, Gerardo (2); Irvine, Mark (3); Derimian, Yevgeny (4);

Programme Agenda

Delmas, Leo (1); Meygret, Aimé (1), 1: Centre National d'Etudes Spatiales (CNES), France; 2: NASA Jet Propulsion Laboratory (JPL), United States; 3: INRAE, Bordeaux, France; 4: Université Lille, CNRS, UMR 8518 - LOA - Laboratoire d'Optique Atmosphérique, France

Discussion and Recommendations

10:30 - 10:40

Coffee Break

10:40 - 11:10

3.2 Calibration & International Joint Airborn Campaign (2) (S10)

Chairs: Dirk Schuettmeyer, ESA, Mark Rankin Irvine, INRAE

11:10 - 12:40



11:10-11:25 | Applying lessons learned from Landsat 8 and 9 Thermal Infrared Sensor Calibration for future thermal missions

Presenting author: Wenny, Brian

Wenny, Brian (1); Thome, Kurtis (2); Montanaro, Matthew (3); Voskanian, Norvik (1); Tahersima, Mohammad (1); Yarahmadi, Mehran (1), 1: Science Systems & Applications Inc., USA; 2: NASA Goddard Space Flight Center, USA; 3: Rochester Institute of Technology, USA



11:25-11:40 | Thermal domain directional effects in flying missions: Landsat-8, Ecostress and Master

Presenting author: Michel, Julien

Michel, Julien (1); Hagolle, Olivier (1); Gamet, Philippe (1); Roujean, Jean-Louis (1); Hook, Simon (2), 1: CESBIO, Université de Toulouse, CNES/CNRS/INRAe/IRD/UPS; 2: JPL/NASA



11:40-11:55 | First Results of the CAL/VAL Activities for Landsat 9 TIRS-2 at the Valencia Test Site

Presenting author: Perelló, Martín

Nicls, Raquel; Perelló, Martín; Puchades, Jesús; Coll, César; Valor, Enric, Department of Earth Physics and Thermodynamics, University of Valencia, Spain



11:55-12:10 | VALIDATION OF THERMAL INFRARED SATELLITE MEASUREMENTS USING AUTOMATED VALIDATION SITES

Presenting author: Hook, Simon

Hook, Simon; Cawse-Nicholson, Kerry; Johnson, William; Radocinski, Robert; Rivera, Gerardo, NASA/JPL, United States of America



12:10-12:25 | An international airborne and field campaign to understand thermal directional anisotropy at the satellite scale over European agricultural regions

Programme Agenda

Presenting author: Wooster, Martin

Langsdale, Mary (1,2); Wooster, Martin (1,2); Schuettemeyer, Dirk (3); Hook, Simon (4); Middleton, Callum (1,2); Grosvenor, Mark (1,2); Eng, Bjorn (4); Colombo, Roberto (5); Miglietta, Franco (6); Genesio, Lorenzo (6); Johnson, William (4); Buongiorno, Fabrizia (7), 1: Department for Geography, King's College London; 2: National Centre for Earth Observation; 3: European Space Agency; 4: NASA/ Jet Propulsion Laboratory; 5: University of Milano Bicocca; 6: Institute of Bioeconomy, CNR; 7: Istituto Nazionale di Geofisica e Vulcanologia



12:25-12:40 | Airborne thermal infrared data for the estimation of evapotranspiration and crop water use efficiency

Presenting author: Corbari, Chiara

Corbari, Chiara (1); Paciolla, Nicola (1); Hu, Tian (2); Ronellenfitsch, Franz Kai (2); Schlerf, Martin (2); BOSSUNG, Christian (2); Crisafulli, Virginia (3); Ceppi, Alessandro (1); Feki, Mouna (1); Llorens, Rafael (3); Skokovic Jovanovic, Drazen (3); Al Bitar, Ahmad (4); Mallick, Kaniska (2); Sobrino, Jos (3); Mancini, Marco (1), 1: Politecnico di Milano, Milan, Italy; 2: Luxembourg Institute of Science and Technology, Belvaux, Luxembourg; 3: University of Valencia, Valencia, Spain; 4: Cesbio, Toulouse, France

Discussion and Recommendations

12:40 - 12:50

Closing Session

Chairs: Giuseppe Ottavianelli ESA, Benjamin Koetz ESA, Simon Hook NASA/JPL, Philippe Gamet CNES, Sara Venafrà ASI, Bimal Bhattacharya ISRO

12:50 - 13:15