Detailed Programme

(v20240201)

Day 1, MONDAY 27 November 2023 - Auditorium I

8:00	9:00	60	**Registration**			
9:00	**12:30**	210	**Opening Session**	**Chairs: Jérôme Benveniste, ESA Jean-François Crétaux, CNES/LEGOS**		
9:00	9:10	10	Introduction and Scope of the Workshop	Jérôme Benveniste	ESA	ESA
9:10	9:20	10	Welcome from Portugal	Ricardo Conde	Portuguese Space Agency	PT
9:20	9:30	10	Welcome ESA	Jérôme Benveniste	ESA	ESA
9:30	9:40	10	Welcome CNES	Sophie Le Gac	CNES	FR
9:40	9:50	10	Welcome GEWEX	Peter van Oevelen	GEWEX	US
9:50	10:00	10	Welcome EC DG-RTD	Panagiotis Balabanis	EC DG-RTD	BE
10:00	10:20	20	Keynote: Towards a Digital Twin for the Water and Energy Cycle over Land	Luca Brocca	CNR-IRPI	IT
			L. Brocca (CNR-IRPI, Italy), S. Gabellani, L. Alfieri, F. Avanzi, F. Delogu (CIMA Foundation, Italy), W. Wagner, M. Vreugdenhil (TU Wien, Austria), D. Miralles (UGent, Belgium), K. Nielsen (DTU, Denmark), F. Aires (ESTELLUS, France), D. Dalmonech and A. Collalti (CNR-ISAFOM, Italy), P. Quintana-Segui (OBSEBRE, Spain), S. Mantovani (MEEO, Italy), G. De Lannoy (KULeuven, Belgium), R. Orth (MaxPlanck, Germany), L. Samaniego, O. Rakovec (UFZ, Germany), J. Brombacher (eLEAF, The Netherlands), G. Camps-Valls (IPL, Spain), I. Trigo (IPMA, Portugal), S. Camici, A. Tarpanelli, C. Massari, L. Ciabatta, S. Barbetta, S. Modanesi, P. Filippucci, H. Mosaffa (CNR-IRPI, Italy), J. Dari (UNIPG, Italy)			
10:20	10:40	20	Keynote: Enabling Climate Resilient Flood Management in South Sudan Using Earth Observation Data	Beatriz Revilla-Romero	GMV	SP
			Élia Cantoni-Gómez(1), Beatriz Revilla-Romero(1), Edoardo Borgomeo(2), Carlos Domenech(1), Antonio Rodriguez Serrano(2), Lukas Loescher(2), Clément Albergel(3) (1)GMV, Tres Cantos,, Spain, (2)World Bank, United States, (3)European Space Agency Climate Office, ECSAT, Harwell Campus, Didcot, UK			
10:40	11:00	20	Keynote: Toward a global long-term spatio-temporal variations of surface water storage anomaly from space from 1992 to 2015	Benjamin Kitambo	LEGOS	FR
			Benjamin Kitambo(1)(2)(3), Fabrice Papa(1)(4), Adrien Paris(1)(5), Sly Wongchuig(1), Sylvain Biancamaria(1), Frederic Frappart(6), Ayan Santos Fleischmann(7), Romulo Jucá Oliveira(1), Laetitia Gal(1)(5), Pr. Raphael Tshimanga(2), Stephane Calmant(1) (1)Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), Université de Toulouse, CNES/CNRS/IRD/UT3, (2)Congo Basin Water Resources Research Center (CRREBaC) & the Regional School of Water, University of Kinshasa, (3)Faculty of sciences, Department of Geology, University of Lubumbashi, Route Kasapa, (4)UnB, Universidade de Brasília, Institute of Geosciences, Campus Universitario Darcy Ribeiro, 70910-900 Brasilia (DF), (5)Hydro Matters, (1) Chemin de la Pousaraque, 31460, (6)INRAE, UMR1391 ISPA, Université de Bordeaux, F-33140, (7)Instituto de Desenvolvimento Sustentável Mamirauá			
11:00	11:30	30	**Coffee Break**			
11:30	11:50	20	Keynote: Hydrogeodesy for addressing key hydrological questions and water resource sustainability	Fernando Jaramillo	Stockholm University	SE
			Fernando Jaramillo(1), Hossein Hashemi(2), Chao Wang(9), José Andrés Posada-Marín(20), Zahra Kalantari(3), Lan Wang-Erlandsson(22), Vili Virkki(28), Martin Maranon(1), Chunqiao Song(30), Hilary Martens(7), Fabrice Papa(5), Yoshihide Wada(4), Shimon Wdowinski(11), Jessica Fayne(6), Rodrigo Abarca del Rio(8), Jida Wang(12), W.R. Berghuijs(10), Tilo Schöne(13), Xander Huggins(14), Frédéric Frappart(17), Jay Famiglietti(15), Giuliano Di Baldassarre(16), Angelica Tarpanelli(18), Christopher Spence(19), Jean-François Cretaux(5), Kristian Rubiano(21), Michele-Lee Moore(22), George Allen(24), Etienne Fluet-Chouinard(23), Juan F. Salazar(20), Saeid Aminjafari(1), Clara Hubinger(1), Fangfang Yao(25), Luciana Fenoglio(26), Ayan Fleischmann(27), Tamlin Pavelsky(29), Marc Simard(33), Félix Girard(31), Simon Munier(34), Daniel M. Moreira(32), Abigail Robinson(1), Matti Kummu(28), Sebastian Palomino(11) (1)Department of Physical Geography, Stockholm University, Stockholm, Sweden, (2) Department of Water Resources Engineering, Lund University, Lund , Sweden, (3)Department of Sustainable Development, Environmental Science and Engineering, TH Royal Institute of Technology, Stockholm, Sweden, (4)Climate and Livability Initiative, Center for Desert Agriculture, Biological and Environmental Science and Engineering Division, King Abdullah University of Science and Technology, Saudi Arabia, (5)Institut de Recherche pour le Développement (IRD), LEGOS, Université de Toulouse, Toulouse, France, (6)Department of Earth and Environmental Sciences, University of Michigan, Ann Arbor , Ann Arbor, United States, (7)Department of Geosciences, The University of Montana, United States, (8)Departamento de Geofisica, Universidad de Concepcion, Concepción, Chile, (9)Department of Earth, Marine and Environmental Sciences, University of North Carolina at Chapel Hill, Chapel Hill, United States, (10)Faculty of Science, Vrije Universiteit Amsterdam, The Netherlands, (11)Institute of Environment, Department of Earth and Environment, Florida International University, Miami, United States, (12)Department of Geography and Geographic Information Science; University of Illinois Urbana-Champaign, Urbana-Champaign, United States, (13)Department Geodesy; GeoForschungsZentrum Potsdam, Potsdam, Germany, (14)Department of Civil Engineering; University of Victoria, Victoria, Canada, (15)School of Sustainability Faculty; Arizona State University, United States, (16)Department of Earth Sciences; Uppsala University, Uppsala, Sweden, (17)ISPA; Institut National de Recherche pour l'Agriculture, l'Alimentation et l'Environnement (INRAE), France, (18)Research Institute for the Geo-hydrological Protection; National Research Council, Italy, (19)Environment and Climate Change Canada, Canada, (20)GIGA, Escuela Ambiental, Facultad de Ingeniería; Universidad de Antioquia, Medellin, Colombia, (21)Department of Biology, Faculty of Natural Sciences; Universidad del Rosario, Bogota, Colombia, (22)Stockholm Resilience Centre, Stockholm University, Stockholm, Sweden, (23)Earth Systems Predictability and Resiliency Group; Pacific Northwest National Laboratory, United States, (24)Department of Geosciences; Virginia Polytechnic Institute and State University, United States, (25)Environmental Institute; University of Virginia, United States, (26)Institute of Geodesy and Geoinformation; University of Bonn, Germany, Bonn, Germany, (27)Mamirauá Institute for Sustainable Development, Tefé, Amazonas, Brazil, Tefé, Brazil, (28)Water and Development Research Group, Aalto University, Finland, Aalto, Finland, (29)Department of Earth, Marine and Environmental Sciences; University of North Carolina at Chapel Hill, United States, (30)Nanjing Institute of Geography and Limnology, Chinese Academy of Sciences, Nanjing, China, (31)Géosciences Environnement Toulouse; Université de Toulouse, France, Toulouse, France, (32)Geological Survey of Brazil, Brazil, (33)Radar Science and Engineering Section; Jet Propulsion Laboratory, California Institute of Technology, Pasadena, United States, (34)Météo-France; Centre National de Recherches Météorologiques, France			
11:50	12:10	20	Keynote: Conjugate Biophysical Regulation of Stomatal and Aerodynamic Conductances Determines Terrestrial Evaporation Response to Land Surface Temperature Variability	Kanishka Mallick	Luxembourg Institute of Science and Technology	LU
			Kanishka Mallick, Dennis Baldocchi, Tian Hu, Tianxin Wang, Nishan Bhattarai, Joseph Verfaillie, Daphne Szutu, Aolin Jia, Mauro Sulis, Gilles Boulet, Albert Olioso, Chiara Corbari, Hector Nieto, Zoltan Szantoi, Philippe Gamet, Jean-Louis Roujean (1)Luxembourg Institute of Science and Technology			
12:10	12:30	20	Keynote: Update on SWOT: Transformative data from revolutionary technology, and implications for hydrology and water intelligence	Parag Vaze	NASA JPL	US
			Parag Vaze(1), Cedric David(1), Tamlin Pavelsky(2) (1)NASA JPL, Pasadena, United States, (2)University of North Carolina - Chapel Hill, Chapel Hill, United States			
12:30	14:00	90	**Lunch**			
MONDAY 14.00-16.00 Session						
AUDITORIUM I: 1.1 Advances in remote sensing methods, techniques and products						
Co-chairs: Angelica Tarpanelli, Karina Nielsen						
14:00	14:20	20	Extending river discharge time series of the Global Runoff Data Center (GRDC) using satellite data: A product with uncertainty estimate	Omid Elmi	Institute of Geodesy, University of Stuttgart	DE
			Omid Elmi(1), Mohammad J. Tourian(1), Peyman Saemian(1), Nico Sneeuw(1) (1)Institute of Geodesy, University of Stuttgart			
14:20	14:40	20	What can we learn from numerical simulations of satellite altimetry signals over rivers? Detailed study and comparison to a dataset of Sentinel-6MF individual echoes	Sophie Le Gac	CNES	FR
			Eliott Bourget(1)(2)(3), Sophie Le Gac(3), François Boy(3) (1)ISAE/Supaero, Toulouse, France, (2)Royal Institute of Technology (KTH), Stockholm, Sweden, (3)CNES, Toulouse, France			
14:40	15:00	20	Generation of high-resolution water surface slopes from multi-mission satellite altimetry	Christian Schwatke	DGFI-TUM	DE
			Christian Schwatke(1), Michał Halicki(2), Daniel Scherer(1) (1)Technical University of Munich, Deutsches Geodätisches Forschungsinstitut (DGFI-TUM), München, Germany, (2)University of Wroclaw, Department of Geoinformatics and Cartography, Wrocław, Poland			
15:00	15:20	20	Measuring longitudinal river profiles from Sentinel-6MF Fully-Focused SAR mode	Francois Boy	CNES	FR
			Francois Boy(1), Jean-Christophe Poisson, Valentin Fouqueau, Nicolas Picot(1), Sophie Le Gac(1) (1)CNES, Toulouse, France, (2)VorteX-io, Toulouse, France			
15:20	15:40	20	Altimetry for the hydrology of Arctic rivers	Elena Zakharova	EOLA	FR
			Elena Zakharova(1), Karina Nielsen, Alexei Kouraev, Peter Thorne, Inna Krylenko, Sylvain Biancamaria, Claude Duguay, Marco Restano, Jérôme Benveniste (1)EOLA, Toulouse, France et al.			

15:40	16:00	20	DISCUSSION			
			CO-CHAIRS			
16:00	16:30	30	**Coffee Break**			

MONDAY 16.30-18:30 Session

AUDITORIUM I: 1.2 Advances in remote sensing methods, techniques and products

Co-chairs: Kevin Larnier, Elena Zakharova

16:30	16:50	20	Fully Focused SAR Altimetry and Innovative River Level Gauges for Coastal Monitoring – the FFSAR-Coastal Project	David Cotton	SATOC	UK
			David Cotton(1), Karina Nielsen(2), Jean-Christophe Poisson(3), Mikkel Kruse(2), Ole Andersen(2), Charlie Thompson(4), Amani Becker(5), Marco Restano(6), Jérôme Benveniste(7) (1)SATOC, New Mills, United Kingdom, (2)DTU Space, Copenhagen, Denmark, (3)vortex.io, Toulouse, France, (4)Channel Coast Observatory, Southampton, United Kingdom, (5)National Oceanography Centre, Liverpool, United Kingdom, (6)SERCO / ESRIN, Frascati, Italy, (7)ESA/ESRIN, Frascati, Italy			
16:50	17:10	20	An integrated approach for estimating river discharge by leveraging near-infrared sensors	Paolo Filippucci	CNR-IRPI	IT
			Paolo Filippucci(1), Debi Prasad Sahoo(1), Luca Brocca(1), Angelica Tarpanelli(1) (1)Research Institute for Geo-Hydrological Protection, National Research Council, Perugia, Italy			
17:10	17:30	20	Estimating Discharge of Narrow Rivers Using Satellite Altimetry and Optical Imagery	Daniel Scherer	DGFI-TUM	DE
			Daniel Scherer(1), Christian Schwatke(1), Denise Dettmering(1), Florian Seitz(1) (1)Technical University of Munich, Deutsches Geodätisches Forschungsinstitut (DGFI-TUM), Munich, Germany			
17:30	17:50	20	Satellite-based mapping of river discharge at very high spatio-temporal resolution: The Ebro and Po basins	Victor Pellet	Estellus	FR
			Victor Pellet(1), Filipe Aires(1)(2) (1)Estellus, Paris, France, (2)LERMA-Observatoire de Paris, Paris, France			
17:50	18:10	20	The River Discharge Climate Change Initiative project	Angelica Tarpanelli	CNR-IRPI	IT
			Sylvain Biancamaria(1), Alice Andral(2), Silvia Barbetta(3), Malik Boussaroque(4), Luca Brocca(3), Stefania Camici(3), Paolo Filippucci(3), Laeticia Gal(4), Gilles Larnicol(5), Julien Lefebve(6), Simon Munier(7), Fabrice Papa(8), Adrien Paris(4), Vanessa Pedinotti(5), Nicolas Taburet(2), Angelica Tarpanelli(3), Vayre Maxime(2), Elena Zakharova(9), Clément Albergel(10), Jérôme Benveniste(11) (1)CNRS - LEGOS, Toulouse, France, (2)CLS, Ramonville, France, (3)CNR-IRPI, Perugia, Italy, (4)Hydromatters, Toulouse, France, (5)Magellium, Toulouse, Magellium, (6)LEGOS-CNES, Toulouse, France, (7)CNRS-CNRM, Toulouse, France, (8)IRD, Toulouse, France, (9)EOLA, Toulouse, France, (10)ESA-ESCAT, Harwell, UK, (11)ESA-ESRIN, Frascati, Italy			
18:10	18:30	20	DISCUSSION			
			CO-CHAIRS			
18:30	19:30	60	**Icebreaker**			

Day 2, TUESDAY 28 November 2023

TUESDAY 09.00-11.00 Session

AUDITORIUM I: 1.3 Advances in remote sensing methods, techniques and products

Co-chairs: Fernando Jaramillo, Fabrice Papa

9:00	9:20	20	Long-term Water Storage Anomalies Through GRACE Observations and Models' Estimation	Peyman Saemian	Institute of Geodesy, University of Stuttgart	DE
			Peyman Saemian(1), Mohammad J. Tourian(1), Karim Douch(2), Nico Sneeuw(1) (1)Institute of Geodesy, University of Stuttgart, (2)ESRIN ESA Centre for Earth Observation			
9:20	9:40	20	Satellite-derived multivariate world-wide lake physical variable time series for climate studies	Jean-Francois Cretaux	LEGOS	FR
			Laura Carrea, Jean-Francois Cretaux, Yuhao Liu, Beatriz Calmettes, Claude Duguay, Christopher Merchant, Nick Selmes, Stefan Simis, Mark Warren, Hervé Yesou, Dagmar Müller, Dalin Jiang, Owen Embury, Muriel Bergé-Nguyen, Alice Andral, Claudia Giardino, Clément Albergel			
9:40	10:00	20	Improving the retrieval of lake ice thickness with radar altimetry data	Anna Mangilli	CLS	FR
			Anna Mangilli(1), Claude Duguay(2)(3), Pierre Thibaut(1), Justin Murfitt(3), Samira Amraoui(1), Thomas Moreau(1), Craig Donlon(4), Clement Albergel(5), Jerome Bouffard(6) (1)CLS, (2)H(2)O geomatics, (3)University of Waterloo, (4)ESA ESTEC, (5)ESA ECSAT, (6)ESA ESRIN			
10:00	10:20	20	Tracking the volume changes of shallow lakes in West Africa with remote sensing: comparison of existing methods to derive the hypsometric curve	Felix Girard	CNRS-GET-CLS	FR
			Felix Girard(1), Manuela Grippa, Laurent Kergoat, Nicolas Taburet (1)CNRS-GET-CLS			
10:20	10:40	20	The FluViSat project: Measuring global streamflow with very high resolution satellite video	Nick Everard	UKCEH	UK
			Nick Everard(1), Guy Schumann(2), Mark Randall(3) (1)UKCEH, (2)RSS Hydro, (3)Queensland Government			
10:40	11:00	20	DISCUSSION			
			CO-CHAIRS			
11:00	11:30	30	**Coffee Break**			
11:30	12:30	60	**HYDROSPACE-2023 Poster Session**			
12:30	14:00	90	**Lunch**			

Auditorium II: ESA Science Cluster for Hyrology

Co-chairs: Espen Volden , Karim Douch

9:00	9:08	10	Introduction	Espen Volden	ESA	ESA
9:08	9:16	10	4DMED-Hydrology	Christian Massari	CNR-IRPI	IT
9:16	9:24	10	DTE Hydrology Platform	Luca Brocca	CNR-IRPI	IT

9:24	9:32	10	AI4EO Water	Filipe Aires	ESTELLUS	FR
9:32	9:40	10	STREAM-NEXT & DEMETRAS	Angelica Tarpanelli	CNR-IRPI	IT
9:40	9:48	10	Hydrocoastal	Karina Nielsen	DTU	DNK
9:48	9:56	10	AlpSnow	Thomas Nagler	ENVEO	UK
9:56	10:04	10	Irrigation+	Jacopo Dari	University of Perugia/CNR-IRPI	AT
10:04	10:12	10	DEMETRAS SM	Francesco de Zan	Delta Phi	DE
10:12	10:20	10	4DHydro	Luis Samaniego	UFZ	DE
10:20	10:28	10	Storage-Discharge Relationship	Karim Douch	ESA	ESA
10:28	11:00	10	Questions and discussion			
			CO-CHAIRS			
11:00	11:30	30	**Coffee Break**			
11:30	12:30	60	**HYDROSPACE-2023 Poster Session**			
12:30	14:00	90	**Lunch**			
TUESDAY 14.00-16.00 Sessions						
AUDITORIUM I: 1.4 Advances in remote sensing methods, techniques and products						
Co-chairs: Nuno Moreira, Luca Ciabatta						
14:00	14:20	20	Increasing information content delivery for the humanitarian response using FloodSENS and recent advances in AI technologies.	Guy Schumann	RSS-Hydro	LUX
			Guy Schumann(1), Paolo Tamagnone(1), Livio Loi(1) (1)RSS-Hydro, RED			
14:20	14:40	20	Extreme snowfall in the Sierra Nevada Mountains: implications for terrestrial water storage and water supply	Noah Molotch	University of Colorado	US
			Noah Molotch(1), Leanne Lestak(1) (1)University of Colorado			
14:40	15:00	20	Remote sensing of recent extreme daily precipitation events in Madeira island	Nuno Moreira	IPMA	PT
			Nuno Moreira(1), Carla Barroso(2), Paulo Narciso(1), Paulo Pinto(1), Pedro Diegues(1), Victor Prior(1) (1)IPMA - Portuguese Institute for the Sea and Atmosphere, (2)EUMETSAT			
15:00	15:20	20	RainGNSS : an in-situ network for altimetry, water vapor and precipitation validation of satellite-based observations	Bruno Picard	Fluctus Sas	FR
			Bruno Picard(1), Jean-Christophe Poisson(2), Yannick Riou(2), Valentin Fouqueau (1)Fluctus Sas, (2)vorteX-io			
15:20	15:40	20	Satellite observations of snow parameters in mountain regions in support of water management	Thomas Nagler	ENVEO IT GmbH	AT
			Thomas Nagler(1), Gabriele Schwaizer(1), Nico Mölg(1), Lucia Felbauer(1), Lars Keuris(1), Markus Hetzenecker(1), Stefan Scheiblauer(1), Helmut Rott(1), Espen Volden(2) (1)ENVEO IT GmbH, (2)ESA-ESRIN			
15:40	16:00	20	DISCUSSION			
			CO-CHAIRS			
16:00	16:30	30	**Coffee Break**			
Auditorium II: 3.1 Advances in science and process understanding						
Co-chairs: Benjamin Kitambo, Karim Douch						
14:00	14:20	20	Discharge and water storage change from modern-era satellite altimetry	Luciana Fenoglio	University of Bonn	DE
			Luciana Fenoglio(1), Hakan Uyanik(1), Jiaming Chen(1), Jürgen Kusche(1) (1)University of Bonn			
14:20	14:40	20	Water cycle events in the global mass budget	John Reager	NASA/JPL	US
			John Reager(1) (1)NASA Jet Propulsion Laboratory			
14:40	15:00	20	Joint analysis of remotely sensed soil moisture and daily satellite gravimetry to describe water storage dynamics around hydrological extremes	Daniel Blank	HafenCity University Hamburg	DE
			Daniel Blank(1), Annette Eicker(1), Andreas Güntner(2) (1)HafenCity University Hamburg, (2)Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences			
15:00	15:20	20	Current availability and distribution of Congo Basin's freshwater resources	Mohammad Tourian	Institute of Geodesy, University of Stuttgart	DE
			Mohammad Tourian(1), Fabrice Papa(2), Omid Elmi(1), Nico Sneeuw(1), Benjamin Kitambo(2), Raphael Tschimanga(3), Adrien Paris(4), Stephane Calmant(2) (1)University of Stuttgart, Institute of Geodesy, (2)Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), University of Toulouse, CNES/CNRS/IRD/UPS, (14) Avenue Edouard Belin, Toulouse, France, (3)Congo Basin Water Resources Research Center (CRREBaC) and Department of Natural Resources Management, University of Kinshasa (UNIKIN), Kinshasa, Democratic Republic of the Congo, (4)Hydro Matters, (1) Chemin de la Pousaraque, 31460, Le Faget, France			

15:20	15:40	20	Contribution of anthropogenic and hydroclimatic factors on the variation of surface water extent across the contiguous United States	Serena Ceola	University of Bologna	IT
			Serena Ceola(1), Irene Palazzoli(1), Alberto Montanari(1) (1)University of Bologna			
15:40	16:00	20	DISCUSSION			
			CO-CHAIRS			
16:00	16:30	30	**Coffee Break**			

TUESDAY Sessions 16.30-18.30

AUDITORIUM I: 1.5 Advances in remote sensing methods, techniques and products

Co-chairs: Diego Miralles, Jacopo Dari

16:30	16:50	20	The Two-Source Energy Balance (TSEB) model formulation using thermal-infrared remote sensing for evapotranspiration estimation: Applications from field to global scales	William Kustas	USDA-Agricultural Research Service	US
			William Kustas(1), John Norman(2), Martha Anderson(1), Kyle Knipper(3), George Diak(4), Feng Gao(1), Hector Nieto(5), Alfonso Torrez-Rua(6), Hadi Jafaar(7) (1)USDA-Agricultural Research Service, (2)University of Wisconsin-Madison, Department of Soil Science, (3)USDA-ARS, Sustainable Agricultural Water Systems Unit, (4)University of Wisconsin–Madison, Space Sciences and Engineering Center, (5)Institute of Agricultural Sciences - CSIC Tec(4)AGRO Group, (6)Department of Civil and Environmental Engineering, Utah State University, (7)Department of Agriculture, Faculty of Agriculture and Food Sciences, American University of Beirut			
16:50	17:10	20	Evapotranspiration Estimation with Multi-Source Satellite Data in the OpenET platform	Yun Yang	Mississippi State University	US
			Yun Yang(1), Martha Anderson(2), Forrest Meltson(3), Feng Gao(2), Christopher Hain(4), Bill Kustas(2), Kyle Knipper(5), Charles Morton(6), John Volk(6) (1)Mississippi State University, (2)HRSL, USDA-ARS, (3)California State University, (4)NASA-Marshall Space Flight Center, (5)USDA-ARS, (6)Dessert Research Institute			
17:10	17:30	20				
17:30	17:50	20	Advances in Novel Tropospheric Moisture and Stable Water Vapour Isotopologue Satellite Products from SWIR Sensors	Tim Trent	University of Leicester	UK
			Tim Trent(1), Hartmut Boesch(2), Matthias Schneider(3), Kate Willet(4), Marc Schroeder(5), Anja Niedorf(5), Lei Shi(6) (1)University of Leicester, (2)University of Bremen, (3)Karlsruhe Institute of Technology, (4)UKMO, (5)DWD, (6)NOAA			
17:50	18:10	20	Sentinel-6/Michael Freilich performances assessment over Inland Waters during tandem phase with Jason-3	Nicolas Taburet	CLS	FR
			Nicolas Taburet(1), Thomas Moreau(1), François Boy(2), Craig Donlon(3) (1)CLS, (2)CNES, (3)ESA-ESTEC			
18:10	18:30	20	DISCUSSION			
			CO-CHAIRS			

Auditorium II: 3.2 Advances in science and process understanding

Co-chairs: Cintia Bonanad, Sofia Ermida

16:30	16:50	20	Regional-scale, high-resolution estimates of irrigation water use from satellite data	Jacopo Dari	University of Perugia/CNR-IRPI	IT
			Jacopo Dari(1)(2), Sara Modanesi(2), Christian Massari(2), Angelica Tarpanelli(2), Silvia Barbetta(2), Alessia Flammini(1), Raphael Quast(3), Mariette Vreugdenhil(3), Vahid Freeman(4), Pere Quintana-Seguí(5), Anaïs Barella-Ortiz(5), David Bretreger(6), Luca Brocca(2) (1)Dept. of Civil and Environmental Engineering, University of Perugia, (2)Research Institute for Geo-Hydrological Protection, National Research Council, (3)Department of Geodesy and Geoinformation, Research Unit Remote Sensing, TU Wien, (4)Earth Intelligence, Spire Global, (5)Observatori de l'Ebre (OE), Ramon Llull University - CSIC, (6)School of Engineering, The University of Newcastle			
16:50	17:10	20	Lake Desiccation Monitoring in Persian Plateau, Causes and Effects	Amirhossein Ahrari	University of Oulu	FI
			Amirhossein Ahrari(1), Ali Torabi Haghighi(2) (1)Water, Energy and Environmental Engineering Research Unit, University of Oulu, P.O. Box (4)(30)0, (9)00(14), Oulu, Finland, (2)Water, Energy and Environmental Engineering Research Unit, University of Oulu, P.O. Box 4300, 90014, Oulu, Finland			
17:10	17:30	20	The EUMETSAT Satellite Applications Facility on Land Surface Analysis – Improving our understanding of Land Surface Processes	Isabel Trigo	IPMA	PT
			Isabel Trigo(1)(2), Emanuel Dutra(1)(2), Sofia Ermida(1)(2) (1)IPMA, (2)IDL, University of Lisbon			
17:30	17:50	20	Compound extreme sea level events on an estuarine environment: combining in-situ, satellite and modelling tools	Cintia Bonanad	ATLANTIC CoLAB	PT
			Cintia Cintia Bonanad(1), Sylvain Sylvain Capo(2), Soraia Soraia Romão(1), Luis Pedro Luis Pedro Almeida(1), Catarina Catarina Cecilio(1), Pedro Pedro Ribeiro(3) (1)+ATLANTIC CoLAB, (2)Telespazio France, (3)Deimos Engenharia			
17:50	18:10	20	DISCUSSION			
			CO-CHAIRS			

Day 3, WEDNESDAY 29 November 2023

WEDNESDAY 09.00-11.00 Sessions

AUDITORIUM I: 1.6 Advances in remote sensing methods, techniques and products

Co-chairs: Nicolas Picot, Jean-François Crétaux

9:00	9:20	20	Calibration/Validation of SWOT measurements over the lake Issyk-kul	Jean-François Cretaux	CNES	FR
			Roger Fjørtoft(1), Damien Desroches(1), Claire Pottier(1), Nicolas Picot(1) (1)CNES			
9:20	9:40	20	SWOT early results over rivers	Roger Fjørtoft	CNES	FR
			Jean-Francois Cretaux(1), Tilo Schöne, Rysbek Satylkanov, Muriel Berge-Nguyen, Nurdin Sagymbaev, Alexei Kouraev, Gerald Dibarboure, Alexander Zubovich (1)CNES			
9:40	10:00	20	SWOT early results over lakes	Claire Pottier	CNES	FR

			Julien Renou(1), Maxime Vayre(1), Roger Fjortoft(2), Nicolas Picot(2) (1)Collecte Localisation Satellites (CLS), (2)CNES			
10:00	10:20	20	Cal/Val of HR SWOT products using in-situ networks and in-flight nadir altimetry missions	Julien Renou	CLS	FR
			Claire Pottier(1), Cécile Cazals(2), Roger Fjortoft(1), Damien Desroches(1), Jean-François Crétaux(1) (1)CNES, (2)CS Group			
10:20	10:40	20	First analysis of SWOT data on the Garonne River near Marmande	Jean-Christophe Poisson	Vortex-io	FR
			Eliot Lesnard-Evangelista(1), Valentin Fouqueau(1), Jean-Christophe Poisson(1), Guillaume Valladeau(1), Roger Fjortoft(2), Nicolas Picot(2), Laurent Froideval(3), Christophe Conessa(3) (1)Vortex-io, (2)CNES, (3)UNICAEN			
10:40	11:00	20	DISCUSSION			
			CO-CHAIRS			
11:00	11:30	30	**Coffee Break**			
Auditorium II: 4.1 Water science for society						
Co-chairs: Christian Schwatke, Francesco Avanzi						
9:00	9:20	20	Satellite products supporting the understanding of the interaction between inland waters and the coastal zone during extreme events: the case study of the Po River drought	Angelica Tarpanelli	CNR-iRPI	IT
			Angelica Tarpanelli(1), Francesco De Biasio(2), Karina Nielsen(3), Paolo Filippucci(1), Rosa Maria Cavalli(1), Stefano Vignudelli(4) (1)Research Institute for Geo-Hydrological Protection, National Research Council, Italy, (2)Institute of Polar Sciences,National Research Council, (3)National Space Institute, Technical University of Denmark, (4)Institute of Biophysics, National Research Council			
9:20	9:40	20	The EOatSEE coastal total water level product: development, validation, and application	Catarina Cecilio	ATLANTIC CoLAB	PT
			Catarina CECILIO(1), Luis Pedro Almeida(1), Olivier Lauret(2), Olivia Fauny(2), Claire Dufau(2), Florence Birol(3), Marieke A. Eleveld(4), Matthijs Gawehn(4), Cintia Bonanad(1), Pedro Ribeiro(5), Marco Restano(6), Jérôme Benveniste(7) (1)+ATLANTIC CoLAB, (2)CLS - Collecte Localisation Satellites, (3)LEGOS (University of Toulouse, IRD, CNES, CNRS, UPS), (4)Deltares, (5)Deimos Engenharia, (6)SERCO c/o ESRIN, (7)European Space Agency-ESRIN			
9:40	10:00	20	Combining large scale in-situ network and satellite data: towards digital twins of rivers	Jean-christophe Poisson	Vortex-io	FR
			Jean-christophe Poisson(1), Guillaume Valladeau(1), Valentin Fouqueau(1), Eliot Lesnard-Evangelista(1), Yannick Riou(1) (1)Vortex-io			
10:00	10:20	20	Drought monitoring and early warning in Mozambique with satellite soil moisture data	Mariette Vreugdenhil	TU Wien	AT
			Mariette Vreugdenhil(1), Luis Artur(2), Rogerio Borguete Alves Rafael(2), Luca Brocca(3), Stefania Camici(3), Markus Enenkel(4)(5), Sebastiao Famba(2), Samuel Massart(1), Celma Niquice(2), Faruk Pires Semedo Mamugy(2), Wolfgang Preimesberger(1), Pavan Sanjeevamurthy(1), Carina Villegas(1), Wolfgang Wagner(1) (1)TU Wien, (2)University Eduardo Mondlane, (3)CNR IRPI, (4)World Bank, (5)Perigee			
10:20	10:40	20	Depleting groundwater in the Po River Plain, Italy as seen by observations from GRACE and vertical land motion	Christian Massari	CNR-IRPI	US
			Grace Carlson(1), Manuela Girotto(1), Tianxin Wang(1), Destinee Whitaker(1)(2), Susanna Werth(3), Christian Massari (4), (1)University of California, Berkeley, (2)Spelman College, (3)Virginia Polytechnic Institute and State University, (4)Research Institute for Geo-Hydrological Protection, National Research Council, Perugia, Italy			
10:40	11:00	20	DISCUSSION			
			CO-CHAIRS			
11:00	11:30	30	**Coffee Break**			
11:30	12:30	60	**HYDROSPACE-2023 Poster Session**			
12:30	14:00	90	**Lunch**			
WEDNESDAY 14.00-16.00 Sessions						
AUDITORIUM I: 1.7 Advances in remote sensing methods, techniques and products						
Co-chairs: Marco Restano, Jiaming Chen						
14:00	14:20	20	Using image processing techniques to detect inland water bodies in Sentinel-(6)MF Fully Focused SAR radargrams and improve water surface height retrieval: A case study over Garonne River	Jean-Alexis Daguzé	CLS	FR
			Jean-Alexis Daguzé(1), Sophie Le Gac(2), Gabriel Calassou(1), François Boy(2) (1)CLS, (2)CNES			
14:20	14:40	20	River discharge estimation from altimetry with Fully-Focused SAR technique	Jiaming Chen	University of Bonn	DE
			Jiaming Chen(1), Luciana Fenoglio-Marc(1), Hakan Uyanik(1), Jürgen Kusche(1) (1)Institute of Geodesy and Geoinformation (IGG), Universität Bonn			
14:40	15:00	20	Water Surface Level Measurements Over Inland Targets With FFSAR	Ferran Gibert	isardSAT S.L.	ES
			Ferran Gibert(1), Robert Molina(1), Adrià Gómez-Olivé(1), Xavier Domingo(1), Maria José Escorihuela(1), Albert Garcia-Mondéjar(1), Mònica Roca(1) (1)isardSAT S.L.			
15:00	15:20	20	Fault tolerant approach to regenerate L1B SAR altimetry waveforms for enhancing L2 retrackers performance	Mohammad Tourian	Institute of Geodesy, University of Stuttgart	DE
			Shahin Khalili(1), Mohammad J Tourian(1), Omid Elmi(1), Johannes Engels(1), Nico Sneeuw(1) (1)Institute of Geodesy, University of Stuttgart			
15:20	15:40	20	ARARAS (Algorithm for Radar Altimetry Retracking on speculAr waveformS), a new retracking method based on physical model for nadir Low-Resolution Mode (LRM) altimetry over inland waters.	Malik Boussaroque	Hydro-matters/LEGOS	FR
			Malik Boussaroque(1), Laetitia Gal(1), Adrien Paris(1), Fernando Niño(2), Sylvain Biancamaria(2), Stéphane Calmant(2), Sophie Le Gac(3) (1)Hydro-matters, Hosted at Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), Université de Toulouse, CNES/CNRS/IRD/UT3, (2)Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), Université de Toulouse, CNES/CNRS/IRD/UT3, (3)Centre National d'Etudes Spatiales (CNES)			
15:40	16:00	20	DISCUSSION			
			CO-CHAIRS			
16:00	16:30	30	**Coffee Break**			
Auditorium II: 4.2 Water science for society						
Co-chairs: Guy Schumann, Cédric David						

14:00	14:20	20	Operational monitoring of French Guiana rivers using spatial hydrology	Adrien Paris	Hydro Matters/LEGOS	FR
			Adrien Paris(1)(2), Laetitia Gal(1)(2), Stéphane Calmant(2), Romulo Augusto Juca Oliveira(3), Malik Boussaroque(1)(2), Marielle Gosset(3), Marjorie Gallay(4) (1)Hydro Matters, (2)UMR Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), Université de Toulouse, CNES/CNRS/IRD/UT3, (3)UMR Geosciences Environnement Toulouse (GET), Université de Toulouse, CNES/CNRS/IRD/UT3, (4)Office de l'Eau de Guyane, (10) Rue des Remparts, Rue du Vieux Port, Cayenne 97300			
14:20	14:40	20	Developing Best Practices for Flood Map Validation	Antara Dasgupta	RWTH Aachen University	DE
			Tim Landwehr(2), Antara Dasgupta(1), Björn Waske(2) (1)Institute for Hydraulic Engeneering, RWTH Aachen University, (2)Institut für Informatik, Universität Osnabrück			
14:40	15:00	20	Comparison of VV and VH polarization for Sentinel-1 based flood mapping	Florian Roth	TU Wien	AT
			Dipl.Florian Roth(1), BSc Mark Edwin Tupas(1)(2), Bernhard Bauer-Marschallinger(1), Wolfgang Wagner(1) (1)Department of Geodesy and Geoinformation, Technische Universität Wien, (2)Department of Geodetic Engineering, University of the Philippines Diliman			
15:00	15:20	20	Daily Monitoring of the May 2023 Emilia-Romagna Flood Using COSMO-SkyMed data	Luca Pulvirenti	Cima Research Foundation	IT
			Luca Pulvirenti(1), Giuseppe Squicciarino(1), Simone Gabellani(1), Lorenzo Alfieri(1), Luca Cenci(1), Maria Virelli(2), Laura Candela(2), Silvia Puca(3) (1)Cima Research Foundation, (2)Italian Space Agency, (3)Italian Department of Civil Protection			
15:20	15:40	20	Total water storage variations analysis in the Lake Tanganyika watershed over 2002-2021 for water balance monitoring and flood study.	Paul Gérard Gbetkom	LEGOS	FR
			Paul Gérard Gbetkom(1), Jean-François Crétaux(1), Sylvain Biancamaria(1), Alejandro Blazquez(1), Marielle Gosset(2), Adrien Paris(3), Michel Tchilibou(4), Laetitia Gal(3), Benjamin Kitambo(1), Rômulo Augusto Jucá Oliveira(3), Etienne Berthier(1) (1)LEGOS, Université de Toulouse, IRD, CNES, CNRS, UPS, Toulouse, France, (2)GET, Université de Toulouse, IRD, CNES, CNRS, UPS, Toulouse, France, (3) Hydro Matters, (1) Chemin de la Pousaraque, 31460 Le Faget, France, (4)Collecte Localisation Satellites SA, Ramonville Saint-Agne, France			
15:40	16:00	20	DISCUSSION			
			CO-CHAIRS			
16:00	16:30	30	**Coffee Break**			

WEDNESDAY 16.30-18.30 Sessions

AUDITORIUM I: 2.1 Advances in the use of EO for land surface and hydrological modelling

Co-chairs: Filipe Aires, Simon Munier

16:30	16:50	20	Using optimality principles to couple terrestrial carbon and water cycles in remote sensing hydrological models	Rodolfo Nobrega	School of Geographical Sciences	UK
			Rodolfo Nobrega(1), David Sandoval(2), Shen Tan(3), Colin Prentice(2) (1)School of Geographical Sciences, University of Bristol, (2)Imperial College London, Georgina Mace Centre for the Living Planet, Department of Life Sciences, Silwood Park Campus, Buckhurst Road, (3)Sino-French Institute for Earth System Science, College of Urban and Environmental Sciences, Peking University			
16:50	17:10	20	Daily, accurate evapotranspiration from global to local scale	Joost Brombacher	Eleaf	NL
			Lucas Ellerbroek(1), Annemarie Klaasse(1) (1)eLEAF			
17:10	17:30	20	Improving Soil Moisture Simulations Based on Satellite Data-optimized Soil Texture Data	Hui Lu	Tsinghua University	CN
			Hui Lu(1), Qing He(2) (1)Tsinghua University, (2)The University of Tokyo			
17:30	17:50	20	New high-resolution precipitation and soil moisture Earth-Observation data for hydrological modelling in the Mediterranean region	Vianney Sivelle	CNR-IRPI	IT
			Vianney Sivelle(1), Christian Massari(1), Angelica Tarpanelli(1), Yves Tramblay(2), Hamouda Dakhlaoui(3)(4), Pere Quintana Seguí(5), Roger Clavera(5), El Mahdi El Khalki(6) (1)Research Institute of the Geo-Hydrological Protection (CNR-IRPI), Perugia, Italy, (2)HSM, Univ Montpellier, CNRS, IRD, Montpellier, France, (3)LMHE, Ecole Nationale d'Ingénieurs de Tunis, Université Tunis El Manar, BP37, 1002 Tunis Le Belvedère, Tunisia, (4)Ecole Nationale d'Architecture et d'Urbanisme, Université de Carthage, Sidi Bou Said, Tunisia, (5)Observatori de l'Ebre (OE), Ramon Llull University, CSIC, 43520 Roquetes, Spain, (6)International Water Research Institute , Mohammed Vi Polytechnic University (UM6P), Benguerir, Morocco			
17:50	18:10	20	GPM IMERG and its constellations in capturing extreme events and hydrological utility over the conterminous united states	Yang Hong	University of Oklahoma	US
			Yang Hong(1) (1)University of Oklahoma and National Weather Center			
18:10	18:30	20	DISCUSSION			
			CO-CHAIRS			

Auditorium II: 4.3 Water science for society

Co-chairs: Chiara Corbari, Simone Gabellani

16:30	16:50	20	Developing snow-drought indices using H-SAF operational products	Francesco Avanzi	Cima Research Foundation	IT
			Francesco Avanzi(1), Simone Gabellani(1), Michel Isabellon(1), Fabio Delogu(1), David Fairbairn(2), Bertrand Bonan(3), Mariette Vreugdenhil(4), Ali Nadir Arslan(5), Burak Simsek(5), Aynur Sensoy(6), Zuhal Akyurek(7), A. Arda Sorman(6), Silvia Puca(8), Alexander Toniazzo(8), Mario Barbani(8), Nicoletta Roberto(8) (1)Cima Research Foundation, (2)European Centre for Medium-Range Weather Forecasts, (3)CNRM, Université de Toulouse, Météo-France, CNRS, (4)Department of Geodesy and Geoinformation, TU Wien, (5)Finnish Meteorological Institute (FMI), (6)Eskişehir Technical University, Dept. of Civil Eng., (7)Civil Engineering Department, Middle East Technical University, (8) Italian Civil Protection Department			
16:50	17:10	20	Mapping irrigated cropland dynamics with remote sensing for water policy design and assessment	Timothy Foster	University of Manchester	UK
			Timothy Foster(1), Tom Higginbottom(2), Roshan Adhikari(3) (1)University of Manchester, (2)Airbus, (3)Nottingham Trent University			
17:10	17:30	20	Multi-scale water management and drought monitoring at the Morocco national scale	Chiara Corbari	Politecnico di Milano	IT
			Chiara Corbari(1), Justin Sheffield(2), Ahmad Al Bitar(3), Nicola Paciolla(1), Diego Cezar Dos Santos Araujo(1), Sven Berendsen(2), Kamal Labbassi(4), Zoltan Szantoi(5) (1)Politecnico di Milano, (2)University of Southampton, (3)CESBIO, (4)Chouaib Doukkali University, (5)European Space Agency			
17:30	17:50	20	Mapping safe drinking water in low- and middle- income countries using Earth observation data	Esther Greenwood	ETH	CH
			Esther Greenwood(1)(2), Thomas Lauber(1), Johan van den Hoogen(1), Ayca Donmez(3), Robert Bain(3), Richard Johnston(4), Thomas Crowther(1), Timothy Julian(2)(5)(6) (1)Swiss Federal Institute of Technology, ETH, (2)Swiss Federal Institute of Aquatic Science and Technology, Eawag, (3)Division of Data, Analytics, Planning and Monitoring, United Nations Children's Fund, (4)Department of Environment, Climate Change and Health, World Health Organization, (5)Swiss Tropical and Public Health Institute, (6)University of Basel			
17:50	18:10	20	DISCUSSION			
			CO-CHAIRS			

18:30	20:00	90	FREE TIME TO FRESHEN UP BEFORE THE GALA DINNER
20:00	23:00	210	Dinner offered by the Operational Space Hydrology Center - a French open initiative Iberostar Lisboa OSHC OPERATIONAL SPACE HYDROLOGY CENTER

Day 4, THURSDAY 30 November 2023

THURSDAY 09.00-11.00 Sessions

AUDITORIUM I: 5.1 Novel technologies and future missions: the future of water cycle research

Co-chairs: Ilias Daras, John Reager

9:00	9:20	20	ESA/NASA Mass Change and Geosciences International Constellation (MAGIC) - Science and application prospects	Ilias Daras	ESA	NL
			Ilias Daras(1), Guenther March(1), Luca Massotti (1)ESA-ESTEC			
9:20	9:40	20	The H SAF EPS-SG day 1 MWI and MWS Machine Learning algorithms for snowfall and rainfall surface precipitation rate retrieval	Daniele Casella	CNR-ISAC	IT
			Daniele Casella(1), Paolo Sanò(1), Andrea Camplani(1), Leo Pio D'Adderio(1), Stefano Sebastianelli(1), Giulia Panegrossi(1) (1)National Research Council of Italy (CNR-ISAC)			
9:40	10:00	20	Evaluation of snowfall retrieval capabilities of the Arctic Weather Satellite mission: analysis of some case studies	Andrea Camplani	CNR-ISAC	IT
			Andrea Camplani(1), Daniele Casella, Paolo Sanò, Leo Pio D'Adderio, Giulia Panegrossi, Alessandro Battaglia (1)Institute of Atmospheric Sciences and Climate - National Research Council of Italy (CNR-ISAC)			
10:00	10:20	20	Space-borne G-band radars: applications in mid/high latitude cloud and precipitation remote sensing	Alessandro Battaglia	Politecnico di Torino	IT
			Alessandro Battaglia(1), Pavlos Kollias(2) (1)Politecnico di Torino, (2)StonyBrook			
10:20	10:40	20	A Deep Learning model to predict drought in the Horn of Africa using satellite data at daily scale.	Riccardo D'Ercole	CNR-ISAC	IT
			Riccardo D'Ercole(1)(2), Daniele Casella(1), Paolo Sanò(1), Giulia Panegrossi(1) (1)The Institute of Atmospheric Sciences and Climate (CNR-ISAC), (2)University of Naples Federico II			
10:40	11:00	20	DISCUSSION			
			CO-CHAIRS			
11:00	11:30	30	**Coffee Break**			

AUDITORIUM II: 2.2 Advances in the use of EO for land surface and hydrological modelling

Co-chairs: Adrien Paris, Pierre Olivier Malaterre

9:00	9:20	20	EO data + physical modeling: A hybrid approach for a near real-time snow monitoring	Federico Di Paolo	MobyGIS	IT
			Federico Di Paolo(1), Matteo Dall'Amico(1), Ruggero Andreatta(1), Nicolò Franceschetti(1), Mauro Scanagatta(1), Tasin Stefano(1) (1)MobyGIS			
9:20	9:40	20	Assessing the Utility of Multi-Mission High-resolution Satellite Signals for Hydrologic Model Calibration in a Tropical River Basin	Debi Prasad Sahoo	CNR-IRPI	IT
			Debi Prasad Sahoo(1), Mrs. Aiendrila Dey(2), Bhabagrahi Sahoo(2), Angelica Tarpanelli(1) (1)CNR-IRPI, (2)Indian Institute of Technology, Kharagpur, India			
9:40	10:00	20	Satellite-based hydrological modeling over Niger basin: characteristics, sensitivities and performances for better understanding the flood events in Niamey (the 2020 extreme event case)	Romulo Augusto Juca Oliveira	GET	FR
			Romulo Augusto Juca Oliveira(1), Marielle Gosset(1), Laetitia Gal(2), Adrien Paris(2), Eric-Pascal Zahiri(4), Fatou Josiane Guehi(4), Modeste Kacou(4), Vanessa Pedinotti(5) (1)Géosciences Environnement Toulouse (GET), Université de Toulouse, IRD, CNES, CNRS, UPS, (2)Hydro-Matters, (3)Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), Université de Toulouse, CNES/CNRS/IRD/UT3, (4)Université Félix Houphouët-Boigny, UFR SSMT, (5)Magellium			
10:00	10:20	20	River discharge estimation from satellite observations Applications in the Congo River basin	Pierre Olivier Malaterre	INRAE	FR
			Pierre Olivier Malaterre(1), Alice Andral(3), Christophe Brachet(2), Georges Gulemvuga Guzanga(4), Blaise Leandre Tondo(4) (1)INRAE, (2)OIEau, (3)CLS, (4)CICOS			
10:20	10:40	20	Advancing Global-Scale River Discharge Estimation: A Novel Framework for Assimilating SWOT Altimetry using CTRIP-HyDAS.	Kaushlendra Verma	CNRM, Météo-France, CNRS	FR
			Kaushlendra Verma(1), Simon Munier(1), Aaron Boone(1), Patrick Le Moigne(1) (1)CNRM, Météo-France, CNRS			
10:40	11:00	20	DISCUSSION			
			CO-CHAIRS			
11:00	11:30	30	**Coffee Break**			

THURSDAY 11.30-13.30 Sessions

AUDITORIUM I: 5.2 Novel technologies and future missions: the future of water cycle research

Co-chairs: Yiljan Zeng, Wolfgang Wagner						
11:30	11:50	20	High-resolution mapping of terrestrial evapotranspiration using ECOSTRESS: Insights into surface energy balance for future thermal missions	Tian Hu	Luxembourg Institute of Science and Technology	LU
			Tian Hu(1), Kaniska Mallick(1), Patrik Hitzelberger(1), Yoanne Didry(1), Zoltan Szantoi(2)(3), Gilles Boulet(4), Albert Olioso(5), Jean-Louis Roujean(4), Philippe Gamet(4), Simon Hook(6) (1)Luxembourg Institute of Science and Technology , (2)Science, Applications & Climate Department, European Space Agency, (3)Stellenbosch University, (4)Centre d'Etudes Spatiales de la Biosphère, (5)Unité de Recherche écologie des Forêts Méditerranéennes, INRAE, (6)Jet Propulsion Laboratory, California Institute of Technology			
11:50	12:10	20	A global multi-scale ET mapping system using multi-source thermal infrared imaging	Martha Anderson	USDA-ARS	US
			Martha Anderson(1), Chris Hain(2), Thomas Holmes(3), Yun Yang(4), Kyle Knipper(6), Feng Gao(1), William Kustas(1), Carmelo Cammalleri(5), Doris Düthmann(7), Ayman Nassar(8) (1)USDA-ARS, (2)NASA Marshall Space Flight Center, (3)NASA Goddard Space Flight Center, (4)Mississippi State University, (5)Politecnico di Milano, (6)USDA-ARS, (7)Leibniz Institute of Freshwater Ecology and Inland Fisheries, (8)Utah State University			
12:10	12:30	20	Hydrological Remote Sensing using Signals of Opportunity below 400 MHZ	James Garrison	Purdue University	US
			James Garrison(1), Benjamin Nold, Rajat Bindlish, Rashmi Shah, Manuel Vega, Archana Choudhari, Eric Smith (1)Purdue University			
12:30	12:50	20	What are Benefits and Dangers when Using Artificial Intelligence for Monitoring of Soil Moisture from Earth Observation Data?	Wolfgang Wagner	TU Wien	AT
			Wolfgang Wagner(1), Bernhard Raml(1) (1)TU Wien			
12:50	13:10	20	Unleashing the Potential of SAR Imagery for Water Detection: A Self-Supervised U-Net Approach with Knowledge Distillation for Semantic Segmentation	Francisco J. Peña	Stockholm University	SE
			Francisco J. Peña(1)(2), Clara Hübinger(1), Amir H. Payberah(2), Fernando Jaramillo(1) (1)Stockholm University, (2)KTH Royal Institute of Technology			
13:10	13:30	20	DISCUSSION			
			CO-CHAIRS			
13:30	15:00		**Lunch**			

AUDITORIUM II: 2.3 Advances in the use of EO for land surface and hydrological modelling						
Co-chairs: Simon Munier, Rajat Bindlish						
11:30	11:50	20	Coupled hydrological-hydraulic modeling and data assimilation of the Niger and Maroni Rivers using SWOT river products and other EO missions	Kevin Larnier	CE GROUP	FR
			Kevin Larnier(1), Charlotte Emery(1), Pierre-André Garambois(2) (1)CS GROUP - France, (2)INRAE Aix-Marseille Université, RECOVER			
11:50	12:10	20	Contribution of daily observations of water surface elevation from SWOT Nadir altimeter for near-real time monitoring and short-term discharge forecasting in the Maroni River basin, French Guiana.	Laetitia Gal	HYDRO MATTERS/ LEGOS	FR
			Laetitia Gal(1)(2), Adrien Paris(1)(2), Malik Boussaroque(1)(2), Sylvain Biancamaria(2), Romulo Ruca Oliveira(3)(1), Stéphane Calmant(2), Vanessa Pedinotti(4) (1)Hydro Matters, (2)Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS), (3)Geosciences Environnement Toulouse (GET), (4)Magellium			
12:10	12:30	20	Assimilation of Sentinel-1 data to improve estimates of snow, soil moisture, irrigation and discharge in the Po river basin	Gabrielle De Lannoy	KU Leuven	BE
			Gabrielle De Lannoy(1), Louise Busschaert(1), Michel Bechtold(1), Sara Modanesi(2), Isis Brangers(1), Hans Lievens(1), Zdenko Heyvaert(1), Christian Massari(2) (1)KU Leuven, (2)CNR-IRPI			
12:30	12:50	20	Improved modeling of Congo hydrology by representing lake storage dynamics and data assimilation	Sly Wongchuig	LEGOS	FR
			Sly Wongchuig(1), Benjamin Kitambo(1)(2)(3), Fabrice Papa(1)(4), Adrien Paris(1)(5), Ayan Fleischmann(6), Laetitia Gal(5), Julien Boucharel(1)(7), Rodrigo Paiva(8), Romulo Oliveira(1), Raphael Tshimanga(2), Stéphane Calmant(1) (1)LEGOS (Laboratoire d'études en géophysique et océanographie spatiales), (2)Congo Basin Water Resources Research Center (CRREBaC) & the Regional School of Water, University of Kinshasa (UNIKIN), Kinshasa, Democratic Republic of the Congo, (3)Faculty of Sciences, Department of Geology, University of Lubumbashi (UNILU), Route Kasapa, Lubumbashi, Democratic Republic of the Congo, (4)Institute of Geosciences, Campus Universitario Darcy Ribeiro, Universidade de Brasília (UnB), 70910-900 Brasília (DF), Brazil, (5)Hydro Matters, (1) Chemin de la Pousaraque, 31460 Le Faget, France, (6)Instituto de Desenvolvimento Sustentável Mamirauá, Tefé, AM, Brazil, (7)Department of Atmospheric Sciences, School of Ocean and Earth Science and Technology (SOEST), University of Hawai'i at Mānoa, 2525 Correa Road, Honolulu, HI 96822, USA, (8)Instituto de Pesquisas Hidráulicas IPH, Universidade Federal do Rio Grande do Sul UFRGS, Brazil			
12:50	13:10	20	Towards high resolution volume variation from space remote sensing	Christophe Fatras	CLS	FR
			Christophe Fatras(1), Iris Lucas(1), Alice Andral(1), Emeric Lavergne(1), Franck Mercier(1) (1)CLS			
13:10	13:30	20	DISCUSSION			
			CO-CHAIRS			
13:30	15:00	90	**Lunch**			

THURSDAY 15.00-17.00 Sessions

AUDITORIUM I: 5.3 Novel technologies and future missions: the future of water cycle research						
Co-chairs: Antara Dasgupta, Claude Duguay						
15:00	15:20	20	Enabling Flood Inundation Forecasting Through Satellite-based Flood Extent Assimiliation	Antara Dasgupta	RWTH Aachen University	
15:20	15:40	20	The ESA Scout HydroGNSS Small Satellite Mission	Martin Unwin	SSTL	UK
			Martin Unwin(1), Nazzareno Pierdicca, Estel Cardellach, Maria Paola Clarizia, Jean-Pascal Lejault (1)SSTL			
15:40	16:00	20	Digital catchment twins – how holistic approaches improve decision making	Fabian Von Trentini	EOMAP	AT
			Fabian Von Trentini(1), Mrs. Karin Schenk(1), Thomas Heege(1), Florian Willkofer(1) (1)EOMAP			
16:00	16:20	20	Opportunities for lake ice remote sensing from current and future global navigation satellite system reflectometry (GNSS-R) missions.	Yusof Ghiasi	University of Waterloo	CA
			Yusof Ghiasi(1), Claude R. Duguay(1). Department of Geography and Environmental Management, University of Waterloo, Waterloo, ON, Canada. (2). H(2)O Geomatics Inc., Waterloo, ON, Canada (1)University of Waterloo			
16:20	16:40	20	Innovative Autonomous UAV solution for in-situ Cal/Val of satellite altimetry over inland waters and other surfaces	Valentin Fouqueau	Vortex-io	FR
			Valentin Fouqueau(1), Jean-Christophe Poisson(1), Yannick Riou(1), Loïc Richard(2), Laurent Cognet(2), Nicolas Picot(3) (1)Vortex-io, (2)I-TechDrone, (3)CNES			
16:40	17:00	20	DISCUSSION			
			CO-CHAIRS			
17:00	17:30	30	**Coffee Break**			

Auditorium II: 2.4 Advances in the use of EO for land surface and hydrological modelling						
Co-chairs: Gabrielle De Lannoy, Luca Brocca						
15:00	15:20	20	A Deep Learning Approach for Lake Ice Cover Forecasting	Samuel Johnston	H2O Geomatics	CA
			Samuel Johnston(1), Claude Duguay(1)(2), Justin Murfitt(1) (1)H2O Geomatics, (2)University of Waterloo			
15:20	15:40	20	Co-variability of soil moisture, vegetation, and land surface temperature from an Earth Observation perspective	Emanuel Dutra	IPMA	PT
			Julliana Freire(1), Wouter Dorigo(2), Isabel Trigo(1), Emanuel Dutra(1) (1)Instituto Português do Mare da Atmosfera (IPMA), (2)Department of Geodesy and Geoinformation, TU Vien			
15:40	16:00	20	Multi-source data and modeling to understand climate and human compounding effects on flood risk in the Bay of Bengal	Augusto Getirana	NASA Goddard Space Flight Center	US
			Augusto Getirana(1)(2), Nishan Kumar Biswas(1)(3), Wanshu Nie(1)(4), Sujay Kumar(1) (1)NASA Goddard Space Flight Center, (2)Science Applications International Corporation , (3)University of Maryland, Baltimore County, (4)Johns Hopkins University			
16:00	16:20	20	Towards a digital twin of the water cycle in the Mediterranean Basin	Lorenzo Alfieri	Cima Research Foundation	IT
			Lorenzo Alfieri(1), Francesco Avanzi(1), Fabio Delogu(1), Simone Gabellani(1), Luca Brocca(2), Christian Massari(2), Paolo Filippucci(2) (1)Cima Research Foundation, (2) National Research Council, Research Institute for Geo-Hydrological Protection, Perugia, Italy			
16:20	16:40	20	Towards a Digital Twin for the Alps	Stefania Camici	CNR-IRPI	IT
			S. Camici, L. Brocca, S. Barbetta, B. Bonaccorsi, S. Modanesi, A. Tarpanelli (CNR-IRPI, Italy), L. Guardamino, J. Viehweger, M. Lamare (Sentinel Hub GmbH), M. Dall'Amico, Federico Di Paolo, Stefano Tasin, Nicolo Franceschetti, Ruggero Andreatta, Mauro Scanagatta (Mobygis), Clément Michoud, Thierry Oppikoffer (Terranum), Jean-Philippe Malet, David Michéa, Floriane Provost (CNRS/EOST), Michaelis Foumelis (AUTh), P. Bally (ESA)			
16:40	17:00	20	DISCUSSION			
			CO-CHAIRS			
17:00	17:30	30	**Coffee Break**			
17:30-18:30 FREE TIME FOR PREPARING FINAL REPORTING... and more poster viewing						

Day 5, FRIDAY 1 December 2023

FRIDAY 09.00-11.00 Session				
AUDITORIUM I: HYDROSPACE-2023 Plenary Closing Session - Keynote, Sessions Discussion Debrief and General Discussion				
Chairs: Jérôme Benveniste, Jean-François Crétaux and Session Co-Chairs				
9:00	9:20	20	EU water research and innovation – current activities and future perspectives	Panagiotis Balabanis
9:20	9:30	10	Co-Chairs Debrief of Session Discussion: 1. Advances in remote sensing methods, techniques and products	CO-CHAIRS
9:30	9:40	10	Co-Chairs Debrief of Session Discussion: 2. Advances in the use of EO for land surface and hydrological modelling	CO-CHAIRS
9:40	9:50	10	Co-Chairs Debrief of Session Discussion: 3. Advances in science and process understanding	CO-CHAIRS
9:50	10:00	10	Co-Chairs Debrief of Session Discussion: 4. Water science for society	CO-CHAIRS
10:00	10:10	10	Co-Chairs Debrief of Session Discussion: 5. Novel technologies and future missions: the future of water cycle research	CO-CHAIRS
10:10	11:00	50	GENERAL DISCUSSION - RECOMMENDATIONS FOR THE WORKSHOP REPORT	ALL CO-CHAIRS
11:00	11:30	30	Coffee Break	

FRIDAY 11.30-12.45 Session					
AUDITORIUM I: HYDROSPACE-2023 Plenary Closing Session - Final Words, Closing Remarks and Outlook					
Chairs: Jérôme Benveniste, Jean-François Crétaux					
11:30	11:45	15	A Word from GEWEX		GEWEX
11:45	12:00	15	A Word from the European Commission		EC
12:00	12:15	15	A Word from CNES		CNES
12:15	12:45	30	A Word from ESA, Closing Remarks and Outlook	Jérôme Benveniste	ESA
12:45	13:00	15	Posters take down – End of HYDROSPACE-2023		

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3	Improved tropospheric corrections for Coastal and inland water altimetry	Joana Fernandes	123
4	Amazon basin cal/val sites for satellite altimetry.	Daniel Moreira	171
5	Towards the provision of operational FRM measurements for Sentinel-3 over inland water: procedures, protocols and roadmap	Valentin Fouqueau	166
6	Developing a Bio-optical Model for Shallow Coastal Zones in the German Baltic.	Aminah Kaharuddin	37
7	High resolution estimation of SSS and SST in coastal seas from Satellite imagery	Solomon White	138
8	An inter-comparison of approaches and frameworks to quantify irrigation from satellite data	Søren Kragh	17
9	Validation of Surface Inundation Algorithm for HydroGNSS Mission	Jilun Peng	105
10	Deforestation-induced surface warming is influenced by the fragmentation and spatial extent of forest loss in Maritime Southeast Asia	Octavia Crompton	58
11	Monitoring the terrestrial water storage changes and watershed fluxes using GRACE gravity data on regional scales	Sedigheh (Kiana) Karimi	156
12	Groundwater potential modeling of Ar Rub Al Khali using multi-sources of remote sensing in a GIS.	Samy Elmahdy	15
13	Evaluation of GRACE Satellite Data for Groundwater Drought Monitoring in Lorestan Province	Abdolnabi Abdeh Kolahchi	229
14	Assessing Hydrological Connectivity in Wetlands at a Global Scale with D-InSAR	Clara Hübinger	119
15	Preliminary Analysis of Italian Lakes Water Level Monitoring Using GEDI Altimetric Data in Google Earth Engine	Alireza Hamoudzadeh	64
16	Assessing the Impacts of Climate Change and Regulatory Regimes on Lake Water Levels in Sweden Using Satellite and In-situ Data	Saeid Aminjafari	182
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18	Estimation of Lake Water Levels from Sentinel-6 Fully-Focused SAR observations using numerical simulations	Carlos Yanez	24
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20	A Convolutional Neural Network for the Classification of Lake Surface Conditions from SAR Altimetry Waveforms	Jaya Sree Mugunthan	73
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22	Long term analysis of global surface water volume change using remote sensing data	Omid Elmi	148
23	Insights on deriving reservoir volumes from earth observation data, architecture for global processing	Antonio Moreno Rodenas	198
24	SAR, SARin, RDSAR and FF-SAR Altimetry Processing on Demand for Cryosat-2, Sentinel-3 and Sentinel-6 at ESA's Altimetry Virtual Lab	Marco Restano	133
25	Sentinel-3 Inland waters level-2 thematic products: latest results based on full mission reprocessing validation	Filomena Catapano	106
26	Sentinel-3 Land STM: performances of the New Hydrology Thematic Products over Inland Waters	Julien Renou	94
27	Operational Lakes and Rivers Water Level Monitoring using satellite altimetry data in Copernicus Global Land Service	Nicolas Taburet	98
28	C3S: An increased spatial coverage of monitored lakes with nadir altimetry for water level products.	Gabriel Calassou	87
29	AlTiS : Generating Water Level Time-Series from Radar Altimetry	Fabien Blarel	117
30	Evolution of H SAF near real-time rainfall products derived from soil moisture observations	Luca Ciabatta	101
31	An efficient statistical method to correct large-scale precipitation products: Empirical Conditional Probability (ECP) method.	Shima Azimi	168
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34	Specular echoes on a 100 km stretch of the Rhine River	Stefano Vignudelli	215
35	Water extend estimation over inland targets using FF-SAR data.	Adrià Gómez Olivé	190
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37	Automatic toolchain for the generation of coupled hydrology-hydraulic simulations and data assimilation from multi-sources and multi-scales data fusion	Kevin Larnier	135
38	Evaluation of Altimetry Data over Polish Rivers Using Water Gauge Stations and Hydrodynamical Model	Natalia Strojna	33
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40	Improving SAR Altimeter processing over inland water - the ESA HYDROCOASTAL project	David Cotton	38
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43	Assessing Water Level Measurements utilizing Sentinel 3 Satellite Radar Altimetry Data in the Upper Indus River at Tarbela Reservoir	Jasra Rehman	196
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48	Field scale soil moisture retrieval by using Sentinel-1 images over an agricultural area in a semi-arid Mediterranean environment	Giulia Graldi	89
49	Improved Soil Moisture Retrieval using Machine Learning	Victor Pellet	10
50	Performances of SWOT Poseidon-3C altimeter over inland waters and interest of the 1 day revisit time during the fast sampling phase	Nicolas Taburet	115
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52	SWOT expertise center : an full working environment for calibration and validation activities	Mathilde Simeon	18
53	Preliminary assessment of the SWOT L2 Lake products over small water bodies observed during the CalVal orbit in the Alsace and Lorraine regions (France)	Hervé Yésou	185
54	Validation of the cross-over calibration applied on SWOT LR products over lakes	Julien Renou	92
55	Mountain lake survey in the Pyrenees from citizen science in the framework of the LOCSS project and the SWOT Cal-Val	Jean-Francois Cretaux	63
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57	Analyses of the relationship between horizontal and vertical brightness temperatures for derivation of signal-to-noise ratio and vegetation metrics	David Chaparro	207
58	Surfwater – Water Extent Dynamics for Resources Monitoring	Santiago Pena Luque	42
59	RAWSIW: a remote sensing analysis workflow for water quality retrieval in small inland waters	Amir Chegoonian	236
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61	An automatic river segmentation tool for preserving hydraulic signatures	Kevin Larnier	132
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132	Unraveling the Power of Sentinel-3 A Radar Altimetry Waveform for Inland Water Dynamics	Farkhanda Noor	197

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65	The unprecedented heat waves in Summer 2022 caused lake shrinkage in the middle and lower Yangtze River Basin	Changqing Ke	21
66	Estimation of chlorophyll in Danube Lakes in Ukraine using observations from Copernicus Sentinel-2 MSI	Valeriya Ovcharuk	227
67	Temporal and Spatial Analysis of Lake Eğirdir Shoreline Changes Using Satellite Images and Unmanned Aerial Vehicle	Erhan Şener	202
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69	Assessment and Hydrological Validation of Merged Near-Real-Time Satellite-Based Precipitation over Saudi	Raied Alharbi	230
70	Effects of spatial and temporal distribution of precipitation on hydrological modelling sensitivity of small catchments	Elena Grek	210
71	Remote monitoring of water storage in reservoirs behind dams using satellite imagery - a case study in the Algarve, Portugal	Nuno de Santos Loureiro	13
72	Projecting spatiotemporal streamflow changes in a Mediterranean coastal watershed: Insights from EURO-CORDEX and CMIP6 models	Siham Acharki	127
73	Global Discharge Estimation from SWOT Satellite and reference DEMs	Isadora Rezende de Oliveira Silva	104
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77	EUMETSAT H SAF Satellite-derived snow cover products and their applications in hydrology	Ali Nadir Arslan	118
78	Multivariate Data Assimilation for Hydrological Forecasting in Large River Basins: A Case Study on the Niger River Basin Using the HYFAA Modeling Platform	Vanessa Pedinotti	160
79	The LSA SAF data record on evapotranspiration and surface energy fluxes: sub-daily estimates across Europe, Africa and South America throughout the operational life of the MSG satellite	José Miguel Barrios	40
80	Towards the Partitioning of Evapotranspiration Using Remote Sensing Calibration-Free Models	Fernanda Valente	169
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