AfrHySpace
African Space Hydrology Capacity Building Workshop

Monday 17/11

8h30–12h00 Plenary Session: Opening ceremony • **8h30–10h00: Participant Reception** *Registration, badge collection, and distribution of welcome kits.* • **10h00–12h00: Opening ceremony and addresses** ***Moderator*: R. Onguene**	**Lunch Break**	**14h30–17h00 Plenary session: Conference** • **14h00–15h30: Droughts and Floods in Africa** *Exploring initiatives and solutions from African and international institutions and programs.* ***Moderator*: P. Gbetkom** *Speakers:* • Florence Sylvestre (IRD) – 20 mins • Tania Gascon (WMO) – 20 mins • Georges Gulemvuga (CICOS) – 20 mins • Sakaros Bogning (University of Douala) – 20 mins **Coffee Break (30 mins)** • **16H00–17h30: Role and prospects of space hydrology in Africa** *Integrating space hydrology into African water management and risk prevention strategies.* ***Moderator*: L. Gal** *Speakers:* • Jean François Crétaux (LEGOS) – 20 mins • Rakiya Baba-maaji (NASRDA) – 20 mins • Jérôme Benveniste (COSPAR, ex–ESA) – 20 mins • Mal Adji Aminou (ESA) – 20 mins

Tuesday 18/11

9h00–12h00 Plenary Session: Preparation for the field campaign ***Moderators*: P. Gbetkom** • **9h00–10h00: Presentation of the study site** *The Observatory of the Lower Sanaga River Basin* **Speaker:** *R. Onguene/ A. Kpoumie* • **10h00–10h45: Equipment and instruments** *Introduction to the equipment and instruments planned for field data collection* **Speakers:** *D. Moreira, M. Bergé-Nguyen, L. Tedongmo* **Coffee Break (30 mins)** • **11h00–12h00: Structuring of field days and practical instructions** *Presentation of the daily schedule and practical rules to be followed during the field campaign* **Speakers:** *P. Gbetkom/AMMCO/ A. Kpoumie*	**Lunch Break**	**Travel: Kribi–Dizangue**

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Wednesday 19/11

Field Day 1				Lunch Break	14h00–16h00: Practical Session on Currentology **Activities:** *Data extraction, uncertainty calculations, and data analysis* **Facilitators:** *D. Moreira/L. Gal*
Activities	**ADCP** *D. Moreira/ M. Bergé-Nguyen*	**Float Measurements** *R. Onguene/ P. Gbetkom*	**Leveling** J-F. Crétaux/ A. Kpoumie		
9h–10h	Group 1	Group 3	Group 2		
10h–11h	Group 2	Group 1	Group 3		
11h–12h	Group 3	Group 2	Group 1		

Thursday 20/11

Field Day 2				Lunch Break	14h00–16h00: Practical Session on Bathymetry **Activities:** *Data extraction, uncertainty calculations, and data analysis* **Facilitators:** *D. Moreira /P. Gbetkom* ***18h–19h IRD/CNES Aperitif–Discussion:*** **Topic:** *Opportunities and collaborations offered by these institutions to African students and researchers* **Speakers:** *F. Sylvestre (IRD), J-F. Crétaux (CNES)*
Activities	**GNSS/ Echo Sounder** *M. Bergé-Nguyen/* J-F. Crétaux	**GNSS/ Echo Sounder** *D. Moreira / P. Gbetkom*	**Rope Knots** *R. Onguene/* A. Kpoumie		
9h–10h	Group 1	Group 3	Group 2		
10h–11h	Group 2	Group 1	Group 3		
11h–12h	Group 3	Group 2	Group 1		

Friday 21/11

Field Day 3			Lunch Break	14h00–16h00: Practical Session on drone **Activities:** *Extraction of Data, Analysis, and Cartographic Mapping* **Facilitators:** L.*Tedongmo* **Travel: Dizangue– Kribi**
Activities	**Drone** *L. Tedongmo*			
9h–10h	Group 1			
10h–11h	Group 2			
11h–12h	Group 3			

Saturday 22/11

9h00–12h00 Scientific Café on coastal erosion in Kribi

- **9h00–11h00: Discussions and Presentations**

Exploring adaptation solutions to coastal advancement in Kribi – Contributions from the 1st edition of AfrHySpace

***Moderator*: J. Seh**

Speakers:

- Mayor of the City of Kribi
- General Manager of Kribi Port Autority
- Jacques Verron, Hydromatters
- Raphaël Onguene, University of Douala
- Grégoire Abessolo, University of Douala
- Philippe Bardey, adwäisEO

- **11h00–12h00: Beach Visit**

Guided visit to observe and discuss coastal erosion impacts

Lunch Break (Mboamanga Dock)

14h00–16h00 Plenary Session: Field work debrief

Collective analysis of field data and observations, with contextual interpretation of results.

***Moderator*: C. David**

- **14h00–14h30 Currentology Practical Session:**
  - Supervisors: *D. Moreira/L. Gal*
- **14h30–15h00 Bathymetry Practical Session:**
  - Supervisors: *J-F Crétaux/M. Bergé-Nguyen*
- **15h00–15h30 Surface Topography Practical Session:**
  - Supervisors: *L. Tedongmo/P. Gbetkom*
- **15h30–16h00 Discussion and Q&A:**

18h–19h NASA/ESA Aperitif–Discussion:

Topic: *Opportunities and collaborations offered by these institutions to African students and researchers*

Speakers: *C. David (NASA) M. A. Aminou (ESA)*

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Sunday, 23/11
Recreational Visit

Monday 24/11

8h00–12h00 Plenary Session: General Presentation

- **8h00–10h00: Satellites, Hydrology, and Climate**

Presentation of the scientific and technological foundations of space hydrology and its role in addressing climate change.

***Moderator*: S. Bogning**

- Cedric David (NASA/JPL): Water Cycle and Climate Change – 40 minutes
- *Mal Adji Aminou (ESA):* Overview of Satellites – 30 minutes
- Jérôme Benveniste (COSPAR, ex–ESA): Survey of Hydro–Meteorological Satellites – 30 minutes
- Questions and Discussion – 20 minutes

Coffee Break (30 mins)

- **10h30–12h00: Hydroweb Next**

Introduction to Preprocessed Altimetry Data
P. Gbetkom/A. Montazem/J-F. Crétaux

Lunch Break

13h30–17h00 Technical Workshop
Parallel Sessions: Group R and Group P

	Nadir Altimetry (Group R)	Remote Sensing and AI (Group P)
13h30 – 15h00	*Introduction to Raw Altimetry Data.* *J-F Crétaux, P. Gbetkom, S. Bogning, L. Gal* • Principles of Nadir Altimetry • ALTIS NG Presentation	*Introduction to Remote Sensing and Artificial Intelligence.* R. Abarca • General presentation
Coffee Break (30 mins)		
15h30 – 17h00	*Introduction to Raw Altimetry Data.* *J-F Crétaux, P. Gbetkom, S. Bogning, L. Gal* • Practical Session: – Creating Time Series of Water Surface Elevation (WSE)	*Introduction to Remote Sensing and Artificial Intelligence.* R. Abarca • Practical Session: – ChatGTP / IA

Tuesday 25/11

8h30–12h00 Technical Workshop
Parallel Sessions: Group R and Group P

	SWOT Altimetry (Group R)	Modeling with MGB (Group P)
8h30 – 9h30	*Introduction to SWOT Altimetry Data.* *C. Pottier* • General presentation	*Introduction to Hydrological Modeling.* *L. Gal* • General presentation
Coffee Break (30 mins)		
10h00 – 12h00	*Introduction to SWOT Altimetry Data.* *C. David, C. Pottier, D. Moreira, J-F. Crétaux, A. Montazem* • Practical Session: – Accessing data – Extracting variables – Using quality flags	*Introduction to Hydrological Modeling.* *L. Gal, P. Gbetkom, S. Bogning,* • Practical Session: – Data pre–processing – Model setup – Model calibration

Lunch Break

13h30–17h00 Technical Workshop
Parallel Sessions: Group R and Group P

	SWOT Altimetry (Group R)	Modeling with MGB (Group P)
13h30 – 15h00	*Introduction to SWOT Altimetry Data.* *C. David, C. Pottier, D. Moreira, J-F. Crétaux, A. Montazem* • Practical Session: – Accessing data – Extracting variables – Using quality flags	*Introduction to Hydrological Modeling.* *L. Gal, P. Gbetkom, S. Bogning,* • Practical Session: – Data pre–processing – Model setup – Model calibration
Coffee Break (30 mins)		
15h30 – 17h00	*Introduction to SWOT Altimetry Data.* *C. David, C. Pottier, D. Moreira, J-F. Crétaux, A. Montazem* • Practical Session: – Accessing data – Extracting variables – Using quality flags	*Introduction to Hydrological Modeling.* *L. Gal, P. Gbetkom, S. Bogning,* • Practical Session: – Data pre–processing – Model setup – Model calibration

18h–19h Poster – Aperitif

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Wednesday 26/11

	8h30–12h00 Technical Workshop Parallel Sessions: Group R and Group P			13h30–17h00 Technical Workshop Parallel Sessions: Group R and Group P	
	SWOT Altimetry (Group P)	**Modeling with MGB** (Group R)		**SWOT Altimetry** (Group P)	**Modeling with MGB** (Group R)
8h30 – 9h30	*Introduction to SWOT Altimetry Data.* *C. Pottier* • General presentation	*Introduction to Hydrological Modeling.* *L. Gal* • General presentation	**Lunch Break**	*Introduction to SWOT Altimetry Data.* *C. David, C. Pottier, D. Moreira, J-F. Crétaux, A. Montazem* • Practical Session: – Accessing data – Extracting variables – Using quality flags	*Introduction to Hydrological Modeling.* *L. Gal, P. Gbetkom, S. Bogning,* • Practical Session: – Data pre–processing – Model setup – Model calibration
	Coffee Break (30 mins)			**Coffee Break (30 mins)**	
10h00 – 12h00	**SWOT Altimetry** (Group P) *Introduction to SWOT Altimetry Data.* *C. David, C. Pottier, D. Moreira, J-F. Crétaux, A. Montazem* • Practical Session: – Accessing data – Extracting variables – Using quality flags	**Modeling with MGB** (Group R) *Introduction to Hydrological Modeling.* *L. Gal, P. Gbetkom, S. Bogning,* • Practical Session: – Data pre–processing – Model setup – Model calibration		**SWOT Altimetry** (Group P) *Introduction to SWOT Altimetry Data.* *C. David, C. Pottier, D. Moreira, J-F. Crétaux, A. Montazem* • Practical Session: – Accessing data – Extracting variables – Using quality flags	**Modeling with MGB** (Group R) *Introduction to Hydrological Modeling.* *L. Gal, P. Gbetkom, S. Bogning,* • Practical Session: – Data pre–processing – Model setup – Model calibration
15h30 – 17h00					

Thursday 27/11

	8h30–12h00 Technical Workshop Parallel Sessions: Group R and Group P			
	Nadir Altimetry (Group p)	**Remote Sensing and AI** (Group R)		
8h30 – 9h30	*Introduction to Raw Altimetry Data.* *J-F Crétaux, P. Gbetkom, S. Bogning, L. Gal* • Principles of Nadir Altimetry • ALTIS NG Presentation	*Introduction to Remote Sensing and Artificial Intelligence.* R. Abarca • General presentation	**Lunch Break**	**14h00–16h00 Plenary Session: Q&A and Workshop Reproduction** *Open and interactive session combining answers to participant questions with practical exercises tailored to their needs.* ***Moderators*: J-F Crétaux/ L. Gal** ***Organization:*** *Four roundtable stations per workshop, allowing participants to review and deepen their knowledge with guidance from all course instructors.* **16h00–17h00: Experience Sharing** *Collective discussion on lessons learned, achievements, and challenges encountered.* ***Moderator*: R. Onguene**
	Coffee Break (30 mins)			
10h00 – 12h00	**Nadir Altimetry** (Group P) *Introduction to Raw Altimetry Data.* *J-F Crétaux, P. Gbetkom, S. Bogning, L. Gal* • Practical Session: – Creating Time Series of Water Surface Elevation (WSE)	**Remote Sensing and AI** (Group R) *Introduction to Remote Sensing and Artificial Intelligence.* R. Abarca • Practical Session: – ChatGTP / IA		**18h–21h Evening Gala Diner**

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Friday 28/11		
09h30–10h00 Plenary Session: Closing Ceremony *Final addresses by organizers and partners, future perspectives, and a thank–you session.* ***Moderator*: P. Gbetkom**		**Travel: Kribi–Douala**