



# 2nd Conference on SPACE STAR

Science, Technology, Applications & Regulation

October 18-20, 2023, Sousse, TUNISIA

Wednesday, October 18 <sup>th</sup> , 2023 Space Science and Technology	
8:30 to 9:00	Registration Sousse PALACE Hotel 5 stars
9:00 to 9:30	Opening Ceremony Prof. Kamel BESBES, Conference Chair Officials
09:30 to 10:10	<b>Conference Sessions (1): Nanosatellite Technology (1)</b> <b>CubeSat Constellations and Projects in Türkiye</b> Prof. Alim Aslan Rustem, Istanbul Technical University
10:10 to 10:30	Coffee Break
10:30 to 11:50	<b>Oral Communication (1): Space Engineering IA &amp; GNSS</b> Chair: Prof Mounir Mansour
	TEC-01-IA   Y. Gacha, T. Abdellatif   Big Data and Artificial Intelligence Technologies for Drone-Based Applications
	TEC-02-IA   B Guesmi, D Moloney   Hardware-aware, Deep-learning Approaches for Image Denoising and Star Detection for Star Tracker Sensor Ubotica Technologies Dublin, Ireland
	TEC-03-GNSS   H. Ngaya, A. Wanda   Performance Assessment of GNSS Systems to Support Remote Sensing in Africa
TEC-04-GNSS   W. J. Miloch   Ionospheric Plasma Irregularities and their Impact on GNSS Services	
11h50 to 12:20	<b>PAQ Collabora FACT: Fabrication and Application of Cubsats for Tunisia</b> FACT Achievements and prospects, CRMN, FSM, CNCT, ENOVA
12:30 to 14:00	Lunch
14:00 to 14:45	<b>Conference Sessions (2): Nanosatellite Technology (2)</b> <b>INSPIRE-SATs, LATMOS Satellites Serving the Climate Observation and Analysis</b> Dr. Mustapha Meftah, LATMOS/CNRS/UVSQ/SU/Paris Saclay
15:00 to 16:20	<b>Oral Communication (2): Space Technology Nanosatellite Design and Testing</b> Chair : Prof Mohamed Adel KALLALA
	TEC-05-Sat   S. Lahouar, M. Mansour   Design and Fabrication of a Controllable Environment for CubeSat Attitude Testing
	TEC-06-Sat   M. Mansour, S. Lahouar   Study and Implementation of CubeSat Attitude Control Based on magnetorquer
	TEC-07-Sat   N Zelfani, S Lahouar, K Besbes   Miniaturized Symmetric Double E-shaped Microstrip Patch Antenna for CubeSat Communication
TEC-08-Sat   F Ouaja, K Mbarek, K Besbes   Secure Satellite Communication Based on Quantum Technology	
16:10 to 16:30	Coffee Break
16:30 to 17:30	<b>Conference Session (3) "Education Consortium for Space Technology"</b> <b>UNIVERSEH - The Only 'European University' in a Changing Space Sector</b> Prof Eric TSCHIRHART Université de Luxembourg, UNIVERSEH  <b>Introduction to UNISEC-Global - Past, Present, and Future</b> Mrs Rei Kawashima, Secretary-General of UNISEC-Global, Japan



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Thursday, October 19 <sup>th</sup> , 2023 Space Applications and EO		
9:00 to 9:45	<b>Side Event ACCWA, Conference Co-Chair : Prof Zohra LILI CHABAANE</b>	
	<p>➤ <b>Conference Session (4)</b>  <b>ACCWA: An Innovative Set of Remote Sensing Based Monitoring Tools for Agriculture and Water Management in the Mediterranean Region. Ebre Basin Case Study.</b>            Dr Maria Jose Escorihuela, Senior Research Scientist, IsardSat, Spain</p>	
9:45 10:45	<b>Oral Communication (3): ACCWA session 1</b> Chair: Prof Z LILI Chabaane	
	EO-01	G. Paolini, M. J. Escorihuela, M. Olivier, P-S. Magí, B. Joaquim Classification of Irrigation Systems at Field Level from Remotely Sensed Soil Moisture and Actual Evapotranspiration Time Series
	EO-02	M. Khelif, M. J. Escorihuela, A. C. Bellakanji, G. Paolini, Z. Lili Chabaane Exploring Agricultural Drought Indices for Cereal Yield Prediction Assessment in Semi-Arid Regions
	EO-03	M. J. Escorihuela, V. A. Gaspar, G. Paolini, J. M. Villar, M. Pasqual, P. Quintana-Seguí, T. Lacava, F. Albano, E. Ciancia, M. Lahsaini, S. Er-raki, O. Merlin Irrigation and Drainage Monitoring by Remote Sensing for Ecosystems and Water Resources Management
10:45 to 11:05	Coffee Break	
11:10 to 12:10	<b>Oral Communication (4): ACCWA session 2</b> Chair: Dr Maria Jose Escorihuela	
	EO-04	A. Chahbi Belakanji, E. Shil, M. Khelif, M. Zribi, Z. Lili Chabaane Characterization of Cereals Yields Using Different Models Based on Remote Sensing Indicators from the Sentinel-1 and Sentinel-2 Images in a Semi-arid Region
	EO-05	M. Khelif, M. J. Escorihuela, A. Chahbi Bellakanji, G. Paolini, Z. Kassouk, Z. Lili Chabaane Automatization of an Early Cereal Classification Model Using Random Forest and Remote Sensing Data in a Semi-Arid Region
	EO-06	Z. Lili-Chabaane, A. Chahbi, Z. Kassouk, S. Bousbih, M. Shabou, A. Gorab, R. Amri, M. Zribi. A set of Remote Sensing-based Monitoring Tools and Methods for Agriculture and Water Resources Management in the Semi-arid Region: Case Study of Merguellil
12:10 to 13:10	<b>Oral Communication (5): Remote Sensing and Risk Management</b> Chair: Prof Takwa Abdellatif	
	EO-07	W. Talhaoui, T. Sahli Chahed Space Based Disaster Management: Tunisian Experience
	EO-08	J. Aouissi, S. Zakraoui, Z. Kassouk, Z. Lili Chabaane, H Agili, K Chokmani and F Msallem Flood Mapping Using HECRAS 2D and Radar Sentinel 1: Case Study of the Medjerda River, Jendouba-Bousalem Section.
	EO-09	A. Ghattassi, A. Ezzine, S. Saidi Soil Erosion Assessing Through the Synergy of Google Earth Engine and Integrated RUSLE Modelling
13:10 to 14:30	Lunch	

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14:30 to 15:10	<b>Conference Session (5):</b> <b>"Recent advances in AI using Copernicus Satellite Image Time Series for crop classification: Challenges and perspectives"</b> Prof Nesrine Chehata, Senior lecturer in Geomatics and AI for EO - Bordeaux INP Co-founder and President of AGEOS NGO - African Association for Geospatial Development	
15:10 to 16:30	<b>Oral Communication (6): Remote Sensing and Agriculture Management</b> Chair: Prof Nesrine Chehata	
	EO-10	F. Baudry, K. S. Attignon, A. Zine Labidine, Z. Mekki, F. Bigorre, L. El Mansouri, Z. Lili Chabaane, V. Demarez Cooperation in Remote Sensing Through Student Internship Between Rhine-Meuse Water Agency and Francophone Universities to Map Irrigated and Non-irrigated Plots and Estimate Water Abstraction by Type of Soils in Alsace
	EO -11	Z. Kassouk, F. Akacha, H. Habaieb, Z. Lili Chabaane Remote Sensing of Illicit Irrigation at the Oasis Area in Tunisia
	EO-12	H. E. Tebib, A. Hamouda, F. Youssef, D. Michot, E. Vaudour, E. Karray, R. Attia, H. Trabelsi, T. Sahli Chahed Spatial Prediction of Soil Organic Carbon Contents at the Scale of the Plain of Sminja (NE of Tunisia) by Fusing Sentinel-2 Multispectral and Laboratory Hyper-Spectral Data
	EO-13	S. Bounaaja, A. Hamouda, D. Michot, F. Youssef, E. Vaudour, E. Karray, R. Attia, T. Sahli Chahed, H. Trabelsi Assessment of the Effect of Salinity on Soil Organic Carbon Prediction, Using Sentinel-2 Derived Data
16:30 to 17 :00	Coffee Break	
17:00 to 18:00	<b>Oral Communication (7): Remote sensing and natural resources</b> Chair: Dr Zeineb KASSOUK	
	EO-14	D. Ben Othman, A. Ezzine, E. Kochlef, A. Lassoued, Contribution of Remote Sensing and Modelling Techniques in Water Erosion Cartography: Case of Upper-valley of Medjerda-Tunisia
	EO-15	N. BEN YAHIA, W. TALHAOUI Mapping of Mineral Resources by Remote Sensing: A Geospatial Approach
	EO-16	T. Sahli Chahed, W. Talhaoui Earth Observation for Territorial Monitoring and Management Dealing with SDG : CNCT Role
20:00	Social Event (1)	





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Friday, October 20th, 2023 Space Regulations and policies	
<b>Conference Co-Chair: Prof. Refaat CHAABOUNI</b>	
08:30 to 9:30	<b>Panel 1: Space R&amp;D Regional and International Cooperation Perspectives</b> <ul style="list-style-type: none"> <li>➤ Moderator: Prof Mourad Belassoued, DGRS</li> <li>➤ FASRC, SG, Prof Abdelmajid Ben Amara</li> <li>➤ AICTO, SG, Mr Mohamed Ben Amor</li> <li>➤ UA, GMES, Mr Hamdi Kacem</li> <li>➤ CNEEA, DGCI, Mr Malek Kochlef</li> </ul>
9h30 – 10:30	<b>Panel 2: Mediterranean Cooperation for the Development of the Space Domain (EO)</b> <ul style="list-style-type: none"> <li>➤ Moderator : Prof Zohra Lili Chabaane (CNEEA-INAT)</li> <li>➤ CNCT, Tunisia, D Technique, Mr Nizar Tabia</li> <li>➤ EgySat, Egypt, DG, Prof Cherif Sedky,</li> <li>➤ IsardSAT , Dr Maria Jose Escorihuela,</li> <li>➤ OSS, SE, Mr Nebil Ben Khatra</li> </ul>
10:30 to 11:00	Coffee Break
11:00 to 12:00	<b>Panel 3: Progress and Challenges of Africa Space Sector</b> <ul style="list-style-type: none"> <li>➤ Moderator: Prof Refaat Chaabouni, (ENIT)</li> <li>➤ MAM Consulting, Belgium, Dr Michel Bosco</li> <li>➤ UA, Cote d'Ivoire, Dr Tidiane Ouattara</li> <li>➤ JPO, Senegal, Director, Semou Diouf</li> <li>➤ MTC Tunisia, DG, Chaouki Chihi</li> <li>➤ Vernewell LLC, UAE, Malek Trabelssi Loeb</li> </ul>
12:00 to 13:00	<b>Panel 4: Promoting Space Education and Research Programs</b> <ul style="list-style-type: none"> <li>➤ Moderator Prof. Nessrine CHEHATA (AGEOS, INP Bordeaux)</li> <li>➤ CRASTE LF, Morocco, Dr Anas Emran</li> <li>➤ UVSQ, France, Dr Mustapha Meftah</li> <li>➤ ITU, Turkey, Prof Alim Rustem Aslan</li> <li>➤ U Luxembourg, UNIVERSEH European University, Prof. Eric Tschirhart</li> </ul>
Closing Ceremony (Round table about Panel's Recommendations)	
13:15	Closing Lunch
Social Event (2)	

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### Scientific Committee Chairs:

- Prof Kamel Besbes, CRMN, Tunisia
- Prof Zohra Lili Chabaane, INAT, Tunisia
- Prof Refaat Chaabouni, ENIT, Tunisia

### Local Organizing Committee:

- Prof Mohamed Adel Kallala, ENMB, Tunisia
- Dr Amel Neifar, ENIS, Tunisia
- Dr Mongia Mhiri, FSM, Tunisia,
- Dr Nissen Lazreg, CRMN Tunisia

### Program Chairs:

- Dr Samer Lahouar, CRMN, Tunisia
- Dr Mounir Mansour, AM, Tunisia
- Ing. Thouraya Sahli Chahed, CNCT, Tunisia
- Ing Wafa Talhaoui, CNCT, Tunisia
- Dr Nizar Habbachi, CRMN, Tunisia
- Phd St Nozha Zalfani, FSM, Tunisia
- Phd St Thamer Chebbi, DRÄXLMAIER, Tunisia