

The 4th International Workshop on Equatorial Plasma Bubbles

14–18 September 2026

National Institute for Space Research (INPE),
São José dos Campos, São Paulo, Brazil

Support

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Sponsors



EPB-4 Oral Presentation Program

Time	Monday September 14	Tuesday September 15	Wednesday September 16	Thursday September 17	Friday September 18
	Chair: Cristiano Wrasse	Chair: Cosme Figueiredo	Chair: Paulo Fagundes	Chair: Yuichi Otsuka	Chair: Jonas Souza
09:00 – 09:20	Registration	Irina Zakharenkova	Yasunobu Miyoshi	Joseph Huba	Vicenzo Romano
09:20 – 09:25	CGCE Coordinator				
09:25 – 09:30	Head of DICEP				
09:30 – 09:40	AEB				
09:40 – 10:20	Richard Eastes	Shun-Rong Zhang	Jiyao Xu	Esfhan Kherani	Alison Moraes
10:20 – 10:40	Coffee Break	Coffee Break + Poster Session	Coffee Break + Poster Session	Coffee Break + Poster Session	Coffee Break
	Chair: Cristiano Wrasse	Chair: Cosme Figueiredo	Chair: Paulo Fagundes	Chair: Yuichi Otsuka	Chair: Jonas Souza
10:40 – 11:20	Delano Gobbi	Yuichi Otsuka	Cesar Valladares	Jonas Souza	Roberto Madeira
11:20 – 11:40	Rezy Pradipta	Carolina Carmo	Eliah São Sabbas	WeiJia Zhan	Francisco Meneses Jr.
11:40 – 12:00		Paulo Fagundes	Qi Jiang		Teddy Surco Espejo
12:00 – 14:00	Lunch Time	Lunch Time + Group Photo	Lunch Time	Lunch Time	Lunch Time
	Chair: Diego Barros	Chair: Hisao Takahashi	Chair: Prosper Nyassor	Chair: Carolina Carmo	Hisao Takahashi Roundtable Discussion
14:00 – 14:40	Lianhuan Hu	Bela Fejer	Hisao Takahashi	Graciela Molina	
14:40 – 15:20	Charles Swenson	Iurii Cherniak	Cosme Figueiredo	Xiaoqing Pi	
15:20 – 15:40	Coffee Break	Coffee Break + Poster Session	Coffee Break + Poster Session	Coffee Break + Poster Session	
	Chair: Diego Barros	Chair: Hisao Takahashi	Chair: Prosper Nyassor	Chair: Carolina Carmo	Joaquim Resende Presentation and Visit to the EMBRACE
15:40 – 16:00	Edgardo Pacheco	Ankit Kumar	Gang Chen	André Martinon	
16:00 – 16:20		Rodolfo de Jesus	Jixin Guo		
16:20 – 16:40	Luis Loures da Costa	Prosper Nyassor	Gbadebo Adeniran	Gowher Rather	
16:20 – 17:00	Tommaso Lo Presti	Yuxiao Li	Eduardo Macho	Arthur Miranda	
19:00				Workshop Dinner	

- Keynote speakers (green names): 30-minute presentation + 10-minute Q&A
- Regular presentations (black names): 15-minute presentation + 5-minute Q&A
- Roundtable: The Future of EPB Research – EPB-5, Monthly/Annual Virtual International EPB Meetings, Observation Campaigns, New Scientific Insights, and Strategies to Mitigate the Socioeconomic Impacts of Equatorial Plasma Bubbles
- Workshop Dinner – Venue to be decided; expenses will be covered by each participant
- CGCE – General Coordination of Space Engineering, Technology and Science
- DICEP – Space Weather Division
- AEB – The Brazilian Space Agency
- EMBRACE Program – The Brazilian Program for Studies and Monitoring of Space Weather

Session

 Session I - Upcoming Satellite Missions, Ground-Based Experiments, and Innovative Techniques for Monitoring Equatorial Plasma Bubbles

 Session II - Space Weather Effects on the Seeding and Evolution of Equatorial Plasma Bubbles

 Session III - Wave-Like Perturbations, Including Gravity Waves and Medium-Scale Traveling Ionospheric Disturbances, and Their Role in the Seeding and Development of Equatorial Plasma Bubbles

 Session IV - Couple1d Models and Numerical Simulations to Advance the Understanding of Equatorial Plasma Bubble Seeding, Growth, and Variability

 Session V - Advancing Forecasting Capabilities through the Integration of Artificial Intelligence, Machine Learning, Observations, and Modeling

 Session VI - Societal and Technological Impacts of Equatorial Plasma Bubbles on GNSS, Satellite Communications, and Space Weather Services

Speakers and Presentation Titles

	Speaker	Presentation Title
1	Richard Eastes - Laboratory for Atmospheric and Space Physics (LASP), University of Colorado Boulder, USA	EPBs – Insights and Continuing Questions
2	Delano Gobbi - National Institute for Space Research (INPE), Brazil	EQUARS: A Coordinated Multi-Instrument Observational Framework for Equatorial Plasma Bubble Science
3	Rezy Pradipta - Boston College, USA	Formulating a Better Global Coordination for Multi-instrument Data Analysis, Reduction, and Tabulation of Equatorial Spread-F, Equatorial Plasma Bubbles, and Scintillation Occurrences
4	Lianhuan Hu – Institute of Geology and Geophysics, Chinese Academy of Sciences (IGGCAS), China	Monitoring Equatorial Plasma Bubbles and Estimating maximum usable communication frequency from Pacific to Indian Oceans Using the Low Latitude Long Range Ionospheric Radar (LARID)
5	Charles Swenson - Utah State University, USA	Observations of Fine Scale Density Structures in equatorial plasma bubbles by the SPORT Mission
6	Luis Eduardo Vergueiro Loures da Costa - Aeronautics Institute of Technology (ITA), Brazil	ITASAT2: A Multi-Satellite CubeSat Mission to support Space Weather Monitoring and Equatorial Plasma Bubble Investigations
7	Edgardo Pacheco - Instituto Geofísico del Peru, Peru	Characterizing Equatorial Ionospheric Irregularities: Spread-F and Vertical Drifts in Peru
8	Tommaso Lo Presti – GFZ, Germany	Cross-Validation of Equatorial Plasma Bubble Signatures over Brazil from Ground-Based GNSS, In Situ Spaceborne Measurements, and Ionosonde Observations

9	Yuichi Otsuka – Nagoya University, Japan	Occurrence of Plasma Bubbles Reaching Mid-Latitudes Based on GNSS observations at the American Longitudinal Sector
10	Irina Zakharenkova – COSMIC Program Office, University Corporation for Atmospheric Research, Boulder, CO, USA	On occurrence of ionospheric super plasma bubbles during strong geomagnetic storms
11	Bela Fejer - Utah State University, USA	Magnetic Storm Drivers of Equatorial Ionospheric Plasma Bubbles
12	Carolina Carmo – China-Brazil Joint Laboratory for Space Weather (CBJLSW), Brazil	Geomagnetic Storm–Driven Generation and Suppression of Equatorial Plasma Bubbles in the American Sector
13	Paulo Fagundes - University of Vale do Paraíba (UNIVAP), Brazil	Observations of Spread-F During the May 2024 Geomagnetic Superstorm
14	Iurii Cherniak - SRRC, University of Warmia and Mazury in Olsztyn, Poland	On performance of GNSS ROTI maps for investigation of equatorial plasma bubbles development under quiet and disturbed conditions
15	Shun-Rong Zhang - MIT Haystack Observatory, USA	Storm-time observations of Bubble-like Ionospheric Super depletion Structure (BLISS) and Super Equatorial Plasma Bubbles
16	Ankit Kumar - University of Vale do Paraíba (UNIVAP), Brazil	Multi-Instrument Investigation of Equatorial Plasma Bubble Occurrence Over the South American Region During the 15–16 April 2025 Geomagnetic Storms.
17	Rodolfo de Jesus - China-Brazil Joint Laboratory for Space Weather (CBJLSW), Brazil	Dynamics of the equatorial and low-latitude ionosphere in the Brazilian sector during the 11-14 June 2025 geomagnetic storms
18	Prosper Nyassor - National Institute for Space Research (INPE), Brazil	Coupling of the Lower and Upper Atmosphere: Case Studies on the role of Ray Tracing Model
19	Yuxiao Li - Institute of Geology and Geophysics, Chinese Academy of Sciences, China	Complex Ionospheric Irregularity Echoes Observed by Low Latitude Long Range Ionospheric Radar
20	Yasunobu Miyoshi – Kyushu University, Japan	Numerical Simulation of Traveling Ionospheric Disturbances generated by upward propagating gravity waves
21	Xu Jiyao - State Key Laboratory of Solar Activity and Space Weather, Chinese Academy of Sciences, China	Upper Atmospheric Disturbances and Ionospheric Irregularities Induced by Intense Events in the Lower Atmosphere
22	Cesar Valladares - Boston College, USA	Long-term statistics of TEC depletions, S4 indices, and traveling ionospheric disturbances
23	Qi Jiang - School of Earth and Space Science, University of Science and Technology of China, China	Direct Observations of Large-Scale Wave Structures and Post-sunset

		Rise of the Ionosphere in the Generation of Equatorial Spread F
24	Jixin Guo - State Key Laboratory of Solar Activity and Space Weather, National Space Science Center, CAS, China	Quasi-Periodic Wave-like Perturbations of Calcium Ions in the Ionosphere
25	Hisao Takahashi – National Institute for Space Research (INPE), Brazil	Interaction of Equatorial plasma bubbles with travelling ionospheric disturbances and midnight brightness wave observed under the equatorial ionospheric Anomaly zone
26	Cosme Figueiredo - Federal University of Campina Grande (UFCG), Brazil	The Role of Midnight Brightness Waves in Triggering Secondary Instabilities within Equatorial Plasma Bubbles over the Brazilian Sector
27	Gbadebo S. Adeniran – National Institute for Space Research (INPE), Brazil	Scintillation Variability During the 2022–2023 Sudden Stratospheric Warming Under Varying Geomagnetic Conditions Over the Brazilian Sector
28	Gang Chen - School of Earth and Space Science and Technology, Wuhan University, China	Why Do Small-Scale Irregularities Migrate Beyond the Equatorial Plasma Bubble?
29	Eduardo Macho - Mackenzie Presbyterian University, Brazil	Solar-Cycle and Seasonal Variability of Ionospheric Irregularities over the American Sector from GNSS ROTI Observations
30	Elijah F. M. T. São Sabbas – National Institute for Space Research (INPE), Brazil	Atmosphere-Ionosphere Coupling signaled by FAIRIES Observed with the LEONA Network
31	Joseph Huba – Syntek Technologies, USA	Modeling Equatorial Plasma Bubbles
32	Esfhan Kherani – National Institute for Space Research (INPE), Brazil	Day-to-day variability of plasma bubble occurrence during the month of maximum occurrence
33	Jonas Souza - National Institute for Space Research (INPE), Brazil	Climatology of ionospheric plasma bubbles for the Brazilian longitude sector: empirical modeling
34	Weijia Zhan - State Key Laboratory of Solar Activity and Space Weather, National Space Weather Center, Chinese Academy of Sciences, China	Impact of Quiet-Time Day-to-Day Variability of Vertical Drifts on the Generation of Postmidnight ESF
35	María Graciela Molina - School of Exact Sciences and Technology, National University of Tucumán, Argentina	ML models for ionospheric irregularities studies: latest results
36	Xiaoqing Pi – NASA Jet Propulsion Laboratory (JPL), Retired, USA	Predicting Equatorial Vertical Plasma Drift Using TEC data and a Machine Learning Model, and Beyond
37	André Ricardo Fazanaro Martinon – National Institute for Space Research (INPE), Brazil	Forecasting Ionospheric Scintillation: A structured literature review of physics, data, models, and validation

38	Gowher Rather - National Institute for Space Research (INPE), Brazil	Exploiting Spatial Correlations for Scintillation Nowcasting in Brazil: A Graph Neural Network Approach
39	Arthur Henrique Castro Miranda – University of Taubaté, Brazil	Low-Cost IoT-Based GNSS Scintillation Monitor for Distributed Ionospheric Arrays
40	Vicenzo Romano - National Institute of Geophysics and Volcanology (INGV), Italy	From Ionospheric Scintillation Monitoring to Operational Space Weather Services: the INGV experience.
41	Alison de Oliveira Moraes – Aeronautics Institute of Technology (ITA), Brazil	Advances in Statistical Modeling of Ionospheric Scintillation
42	Roberto Livy Gomes Madeira - National Institute for Space Research (INPE), Brazil	Investigating the relations between spectral and temporal parameters of the ionospheric scintillation phenomenon observed by a stand-alone GNSS receiver at Cachoeira Paulista in Brazil
43	Francisco Meneses - Federal Institute for Science and Technology of Paraná, Brazil	Ionospheric Scintillation and Precision Agriculture in Brazil: UAV Operator perceptions and perspectives
44	Teddy Surco Espejo - Boston College, USA	Performance Assessment of Low-Cost GNSS Receiver for Ionospheric Monitoring

Poster Presentation

The remaining participants who submitted abstracts have been selected for poster presentations.

Poster dimensions: 90 cm (width) × 120 cm (height).

Venue: LIT Auditorium

