

(十八) International Topics

Session 14 Advances in Space Weather/Environment Hazards Powered by Supercomputing, Intelligent Computing, and AI Technologies

(Conveners: Bojing Zhu, Yongbing Li, Dingwen Tao, Wu Wang, Liang Dong, Henry Tufo, Gabriele Morra)

Date: October 20th Location: Room 39 (Fourth Floor, 403)

CHAIR: Mei Li, Hailong Yang, Gang Qin, Xianger Lei

Time	No.	Title	Speaker
8:30-8:55	*1	Spatio-temporal features of seismo-ionospheric influence and its potential LAI coupling mechanism	Mei Li (CHAIR)
8:55-9:10	2	Post-Earthquake Real-Time Seismic Simulation on the Line Shine Exascale Supercomputer: Methodology and Applications	Wenqiang Wang
9:10-9:25	3	Adapting HPC Software to Hardware with Effective Performance Analysis and Optimization	Hailong Yang (CHAIR)
9:25-9:40	4	GPU Parallel Implementation of Lattice Boltzmann Method for Magnetohydrodynamic Flow	Wu Wang
9:40-9:55	5	Integrating the Intelligent Computing Ecosystem to Empower Earth Sciences: An Innovative Exploration of China's National Supercomputing Internet(融通智算生态, 算赋地球科学—国家超算互联网的创新探索)	Jingyu Liu
9:55-10:10	6	Counterclockwise rotation of sunspot AR 4482 and its physical implications	Delong Chi
10:10-10:20		BREAK	
10:20-10:45	*7	Solar Energetic Particles and Cosmic Rays: Effects on the Space Environment (太阳高能粒子和宇宙线对空间环境影响研究)	Gang Qin (CHAIR)
10:45-11:00	8	Kinetic Modeling of Coherent Radio Emission from Flare-Energetic Electrons in Coronal Loops	Mehdi Yousefzadeh
11:00-11:15	9	Validating the Mg I 12.32 μm line Diagnostics for Upper-Photospheric Magnetism	Mohamed Sedik
11:15-11:30	10	A Multiphysics Computational Framework Integrating Computational Fluid Dynamics and Electromagnetic Modeling for Complex Transport Phenomena	Walaa Elhamamy
11:30-11:45	11	The Effect of Plasma- β on the Heating Mechanisms during Magnetic Reconnection in Partially Ionized Low Solar Atmosphere	Abdullah Zafar
11:45-12:00	12	Discussion on the Variation of the Cosmic Gamma Ray Flux Observed by LHAASO during Solar Activity	Xianger Lei (CHAIR)

CHAIR: Zhengkun Qin, Liang Dong, Dingwen Tao, Hualing Wei

Time	No.	Title	Speaker
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13:30-13:55	*13	Physics-Driven Deep Learning Reconstruction of FY-3D MWR I Brightness Temperatures Incorporating Static and Dynamic Constraints(融合静态物理约束的 FY-3D MWR I 亮温物理驱动深度学习重构算法研究)	Zhengkun Qin (CHAIR)
13:55-14:10	14	Magnetosphere-Dynamo Coupling at Mercury: Insights from Bow Shock and Magnetopause Responses to Solar Wind Forcing	Peishan He
14:10-14:25	☼15	Research Progress on SEPs on the Fine Structures of the Large Temporal-spatial Current Sheets in Solar Flares/CMEs	Zhihe Wang
14:25-14:40	16	Lithosphere-Atmosphere-Ionosphere Coupling: Opportunities and Challenges from Phenomenon Observation to Physical Prediction	Wang Li
14:40-14:55	17	Progress in China-Malaysia Collaborative Research on Space Weather and Radio Astronomy(中马联合空间天气/射电天文研究进展介绍)	Liang Dong (CHAIR)
14:55-15:10	18	Patents and Software Copyrights: Application, Examination, Commercialization, and Future Prospects(专利与软著申请、受理、转化介绍及未来展望)	Huanxin Feng
15:10-15:20		BREAK	
15:20-15:45	*19	Error-Bounded Lossy Compression and Parallel I/O Acceleration for High-Fidelity Space Weather Simulations (面向空间天气高保真数值模拟的误差可控有损压缩与并行 I/O 加速)	Dingwen Tao (CHAIR)
15:45-16:00	20	Causal Analysis and Predictive Modelling of Space Weather Using Information-Theoretic Measure, Nonlinear System Identification and Machine Learning Techniques	Hualing Wei (CHAIR)
16:00-16:15	21	A Hierarchical Hydrological-Hydraulic-CFD Framework for Urban Flood Inundation Assessment Under Typhoon-Induced Extreme Rainfall	Walaa Elhamamy
16:15-16:30	22	Isotopic Fractionation in Solar Energetic Particle Acceleration: Evidence from Resonant Wave-Particle Interactions and Turbulent Processes	Bojing Zhu
16:30-16:45	☼23	The Mystery of Helium-3 Enrichment in Solar Energetic Particle Acceleration	Zehua Fu
16:45-17:00	24	Long-Term Influence of Solar High-Energy Particles and Cosmic Rays on Lunar Surface Evolution: Modeling with the RHPIC-LBM Framework	Henry Tufo

Session 150 International Lithosphere Program: Progress and Opportunities (Conveners:Qin Wang, Zhonghai Li, Liang Zhao) Date: October 18th Location:Room 40(Fourth Floor,404)			
CHAIR: Qin Wang, Zhonghai Li			
时 间	序	报告题目	报告人
8:30-8:55	*1	The Tibetan Plateau as a passive wide-rift system	Irina M. Artemieva
8:55-9:10	2	Transient Acceleration and Termination of Japan Sea Opening Controlled by Oblique Subduction Induced Slab Window and Mantle	Peigen Luo

		Flow	
9:10–9:25	3	How do carbon and water from stagnant slabs thin the North China Craton?	Yiren Gou
9:25–9:40	4	Thermal Consequences of Progressive Sediment Accretion in the Makran Subduction Zone	Matin Khaledzadeh
9:40–9:55	5	Quantitative estimation of leucosome volume in migmatized eclogite and implications for exhumation dynamics of mafic crust	Chao Yan
9:55–10:10	6	Dual Controls on Lithospheric Dripping: The Role of Mantle Flow and Orogen Scale	Qiuling Wang
10:10–10:20		BREAK	
10:20–10:45	*7	How Many Plates? Scaling Laws Governing Planetary Plate Tessellation	Chunan Tang
10:45–11:00	8	Continental Lithospheric Growth beneath Southern Alaska: Insight from the Joint Full-waveform Inversion.	Mijian Xu
11:00–11:15	9	Earthquake Source Parameters and Tectonic Implications in Central Mongolia	Nomin-Erdene Erdenetsogt
11:15–11:30	10	3D Seismic Velocity Structure of the Eastern North China Craton-Korean Peninsula: New Constraints on SCB-NCP Collision Models East of the Tan-Lu Fault	Junjie Hao
11:30–11:55	*11	Continental Plateaux Uplift by Eclogitization, Underplating and Crustal Melting	Hans Thybo
11:55–12:00	12	Short Presentation of Posters, New Projects of ILP: Connecting Lithosphere with Surface Processes	Qin Wang