

# SCOSTEP's 13th Quadrennial Solar-Terrestrial Physics Symposium (STP13)

October 12 – 18, 2014, Xi'An, Shanxi, China

## Program

### Sunday October 12

Registration      *Titan Times Hotel*      10:00 – 22:00

Reception      *Zijinting Ballroom at Quest Hotel*      18:00 – 21:00

### Monday October 13

#### Session 1: Inauguration & SCOSTEP Awards

*Chair: Franz-Josef Lübken*

*Venue: Crystal Ballroom*

8:00      Registration      \*Invited talks      \*\*Overview talks

8:45	Nat Gopalswamy	President's Welcome
8:55	Zuo Xiao	Welcome address
9:05	Marianna Shepherd	Financial support announcements
9:10	Award Ceremony	Jia Yue Distinguished Young Scientist Neel Savani Distinguished Young Scientist Gordon Shepherd Distinguished Scientist

10:00      Group Photo & Coffee break

#### Session 2: Keynote Talks

*Chair: K. Georgieva*

*Venue: Crystal Ballroom*

10:45	Peter Pilewskie	Intra-atmospheric Chain in Sun-Earth Connections (12)
11:20	Leif Svalgaard	Recent Progress in Long-Term Solar Activity (14)
11:55	Vladimir Obridko	Mass transport in the heliosphere (21)

The numbers in parentheses at the end of paper titles is the abstract number.

12:30      Lunch

### Session 3: SCOSTEP Scientific Program

Chair: K. Shiokawa

Venue: Crystal Ballroom

14:00	Iliia Roussev*	Synergy between SCOSTEP and NSF's GEM, CEDAR, and SHINE Programs (132)
14:20	Duggirala Pallamraju*	CAWSES Program (1)
14:40	Katya Georgieva*	VarSITI Program (55)
15:00	VarSITI Expo	The VarSITI Team
15:50	Chi Wang**	Space Weather Meridian Project (44)

16:10 Coffee break

### Session 4: Poster session

Chair: Craig Rodger

Venue: Crystal Ballroom

16:30	Poster authors	Poster Viewing, Refreshments. Poster authors: please be at your poster
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18:30 Adjourn

## Tuesday October 14

### Session 5: Intra-Atmospheric Chain I

Chair: Takuji Nakamura

Venue: Crystal Ballroom

8:30	Franz-Josef Lübken**	Solar and anthropogenic impact on the middle atmosphere: an overview (25)
9:00	Jan Lastovicka**	Long-Term Trends in the Upper Atmosphere-Ionosphere – Roles of Different Trend Drivers (199)
9:30	William Ward**	Large scale atmospheric coupling processes and transport (3)
10:00	Tim Fuller-Rowell	Impact of the Lower Atmosphere on Variability and Mixing in the Thermosphere and Ionosphere (39)
10:15	Chuan Yue	Lidar observations of the middle atmospheric

		thermal structure over North China (17)
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10:30 Coffee break

### Session 6: Space Weather Meridian I

*Chair: Suiyan Fu*

*Venue: Crystal Ballroom*

10:50	Shunrong Zhang*	Meridian Circle International Observation (MERINO): Results from the 2014 campaigns (100)
11:10	John Foster*	Coupled Observations of Space weather Storms in the Geospace (130)
11:30	Hongqiao Hu*	An overview on PRIC's UAP observation in the polar regions (57)
11:50	Anthony P van Eyken*	Space Weather: The current and future role of the Incoherent Scatter Radar network
12:10	Qian Wu*	Thermospheric wind observations and simulations (167)

12:30 Lunch

### Parallel Sessions

#### Session 7.1 Intra-Atmospheric Chain II

*Chair: Tim Fuller-Rowell*

*Venue: Crystal Ballroom*

14:00	Huixin Liu*	Thermosphere response to stratospheric sudden warmings (152)
14:20	Marianna Shepherd*	Global and seasonal extent of the thermospheric midnight temperature maximum as seen in O(1D) nightglow by the Wind Imaging Interferometer (WINDII) (188)
14:40	Zuo Xiao*	Response of mid-latitude ionosphere to extreme surface conditions (138)
15:00	Kazuo Shiokawa	Response of the ionosphere and thermosphere to gravity waves from the lower atmosphere – Observations by the Optical Mesosphere-Thermosphere Imagers (OMTIs) (58)

15:15	Zhipeng Ren	Simulated equinoctial asymmetry of the ionospheric vertical plasma drifts (67)
15:30	Jiuhou Lei	Nonmigrating tidal modulation of the equatorial thermosphere and ionosphere anomaly (106)
15:45	Endawoke Yizengaw	Postmidnight bubbles and scintillations in the quiet-time June solstice: possible forcing from lower atmosphere (145)

16:00 Coffee break

### **Session 8.1 Intra-Atmospheric Chain III**

*Chair: Jan Lastovicka*

*Venue: Crystal Ballroom*

16:15	Manuel Lopez-Puertas	Solar cycle and seasonal variability of CO and CO <sub>2</sub> in the mesosphere and lower thermosphere: MIPAS and ACE-FTS observations and WACCM simulations (83)
16:30	Yvan Orsolini*	Coupling of the polar stratosphere and mesosphere during stratospheric sudden warmings (38)
16:50	Charles Lin*	Study of the Ionospheric Mid-latitude Summer Nighttime Anomaly (43)
17:10	Konstantin Ratovsky*	Solar activity impact on ionosphere-atmosphere coupling in the East Asian region (156)
17:30	Erko Jacobson	Coupling between Arctic and northern Europe climate, according to NCEP-CFSR and ERA-INT reanalyses (13)

17:45 Poster Viewing, Refreshments

### **Session 7.2 Space Weather Meridian II**

*Chair: John Foster*

*Venue: Crystal Ballroom*

14:00	You Yu	Tidal wind mapping from observations of a meteor radar chain (61)
14:15	Irk Shagimuratov	Study of the TEC fluctuations in the high latitude ionosphere by GNSS measurements (41)
14:30	Xu Zou	Gravity wave parameters and their seasonal

		variations derived from Na lidar observations at 20°N, Haikou, China (9)
14:45	Hong Yang	The Observation of Sporadic Sodium Layer at a low-latitude location (Haikou, China, 20.0° N, 110.3° E) by Lidar (16)
15:00	Xiao Liu	Large winds and wind shears caused by the interaction between gravity waves and tides in the mesosphere and lower thermosphere (112)
15:45	Alexandr Shcherbakov	Study of Ionospheric Dynamics with Irkutsk Incoherent Scatter Radar (113)
16:00	Qinghe Zhang	Recent progress in the studies of Polar Cap Ionization Patches (87)

16:15 Coffee break, Posters

### Wednesday October 15

#### Session 9.1 Electromagnetic Chain 2a

*Chair: Mei Zhang*

*Venue: Cyanite Ballroom*

8:30	Dibyendu Nandy**	Origin and Long-term Evolution of the Sun's Magnetism (18)
9:00	Sami Solanki*	Solar irradiance variability and the Earth's climate (210)
9:20	Jie Jiang*	Evolution of the solar polar field (133)
9:40	Alexei Krivolutski*	Solar cycle forcing on the lower ionosphere: 3D simulations with CHARM-I model (178)
10:00	Petrus Martens	Solar Data Mining Using Automated Feature Detection: First Scientific Results (30)

10:15 Coffee break

#### Session 10.1 Electromagnetic Chain 2a

*Chair: Dibyendu Nandy*

*Venue: Cyanite Ballroom*

10:40	Martin Kaufmann	Atomic oxygen in the mesopause region as derived from SCIAMACHY O(1S) green line
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		measurements (56)
11:00	Mei Zhang	On solar-cycle variation of subsurface kinetic helicity (74)
11:20	Tamara Kuznetsova	Long-term variability of electromagnetic characteristics in solar wind streams and its connection with 22-year solar magnetic cycle and geomagnetic activity for measurement period 1964-2014 at near-Earth orbit (88)
11:35	Kirill Kuzanyan	Magnetic helicity traced by swirls in sunspots: results from high cadence multi-wavelength observations on board SDO (191)
11:55	Dawei Guo	Multiple-spacecraft observation of current sheets in the solar wind (143)
12:10	Dmitry Sokolof	Fluctuations in solar dynamos (175)

12:30 Lunch

### Session 9.2 Electromagnetic Chain 2b

*Chair: Jie Zhang*

*Venue: Opal Ballroom*

8:30	Jean-Pierre Raulin**	Transient and long-term solar activity: Origin and impact on the Earth's atmosphere (19)
9:00	Kazunari Shibata*	Superflares on Solar type Stars and Their Implications on the Possibility of Superflares on the Sun (86)
9:20	Phillip Chamberlin*	New Measurements of Solar flare spectra from SDO/EVE and their impact on planetary Ionosphere and Thermosphere systems (214)
9:40	Martin Mlynczack*	Variability of the Sun and Its Impact on the ITM System (213)

10:00 Coffee break

### Session 10.2 Electromagnetic Chain 2b

*Chair: Kazunari Shibata*

*Venue: Opal Ballroom*

10:40	Neethal Thomas	Study of Daytime Pi2 Pulsations (24)
10:55	Miroslav Barta	Role of plasmoids in energy cascade in magnetic reconnection in solar flares: Modelling and relation

		to observations (32)
11:10	Huijun Le	Global thermospheric disturbances during a solar flare: Modeling study (65)
11:25	Ying Xu	The measurement results of O2(0-1) airglow at 94km altitude by GBAII (84)
11:40	Ying Li	Chromospheric Evaporation in an X1.0 Flare Observed with IRIS and EIS (101)
11:55	Kai Liu	Extremely Large EUV Late Phase of Solar Flares (118)
12:10	Yue Deng	Wavelength dependence of solar irradiance enhancement during flares and its influence on the upper atmosphere (171)

12:25 Lunch

### Free Afternoon

**Thursday October 16**

### Session 11. Electromagnetic Chain 2c.

*Chair: Yihua Yan*

*Venue: Crystal Ballroom*

8:30	Stuart Bale**	Coronal, Interplanetary, and Terrestrial Radio Bursts (15)
9:00	Yao Chen*	A solar type ii radio burst from CME–coronal ray interaction: simultaneous radio and extreme ultraviolet imaging (52)
9:20	Ying Liu*	Evolution of Coronal Mass Ejections through the Heliosphere (114)
9:40	Alessandro Bemporad*	Study of CME-driven shocks with remote sensing data: recent results and prospects from future solar missions (209)
10:00	Xiangliang Kong	Coronal Type II Radio Bursts Associated with Helmet Streamers and Electron Acceleration in a Streamer-Shock System (69)

10:15 Coffee break

**Session 12. Mass Chain 1c.**

*Chair: N. Nitta*

*Venue: Crystal Ballroom*

10:40	Annika Seppälä**	Energetic Particles, Atmosphere and Regional Climate (212)
11:10	Karel Kudela*	Quasi-periodic variations of low energy cosmic rays (60)
11:30	Charlie Jackman*	The Influence of Very Large Solar Proton Events on the Mesosphere and Stratosphere (168)
11:50	Bernd Funke*	Mesosphere-stratosphere coupling via energetic particle precipitation (136)
12:10	Xiaochen Guo	Galactic Cosmic Ray Modulation near the Heliopause (23)

12:25 Lunch

**Parallel Sessions**

**Session 13.1 Electromagnetic Chain 2c.**

*Chair: Gang Li*

*Venue: Crystal Ballroom*

14:00	Vratislav Krupar*	Statistical Survey of Type III Radio Bursts Observed by the STEREO/Waves Instruments (109)
14:20	Craig Rodger*	Terrestrial radio emission: From the ground into "outer space" (148)
14:40	Yihua Yan*	On Chinese Spectral Radioheliograph for Space Weather Studies (77)
15:00	Pertti Mäkelä	The Height of Coronal Mass Ejections at the Onset of Metric Type II Bursts (85)
15:15	Vasanth Veluchamy	Geo-effectiveness of CMEs with DH-type II radio bursts (90)
15:30	Viktor Fainshtein	Formation, kinematics and nature of shocks associated with CMEs (195)



15:45	Guohui Du	Temporal Spectral Shift of Band-splitting Type II Solar Radio Bursts (70)
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16:00 Coffee break, Posters

### Session 13.2 Mass Chain 1c.

*Chair: Gang Qin*

*Venue: Opal Ballroom*

14:00	Eduard Kontar*	Energetic particles during solar flares (215)
14:20	Gang Li	Particle Acceleration at a Pair of Parallel Shocks near the Sun using a test particle simulation (40)
14:35	Hong Xie	Different Electron and Proton Onset Times of SEP Events (80)
14:50	Roksoon Kim	A new classification of SPEs based on the multi-energy channel (107)
15:05	Lihua Zhang	Anomalous Cosmic Rays Acceleration by the Termination Shock (126)
15:20	Wei Chu	Study of geomagnetic cutoff rigidity of cosmic ray in higher latitudes (127)
15:35	Huilian Liu	Study of Correlations between the Galactic Cosmic Rays (GCRs) and the Earth Cloud Properties (134)
15:50	Zhenning Shen	A study of cosmic ray flux based on the noise in raw CCD data from solar images (137)

16:05 Coffee break

### Session 14.2 Mass Chain 1c.

*Chair: Roksoon Kim*

*Venue: Opal Ballroom*

4:20	Badruddin	Study of Geoeffectiveness, and Relative Importance, of Different Structures/Features in ICME and CIRs (111)
4:35	Yang Wang	Estimation of the release time of solar energetic particles near the Sun (153)

4:50	Fanjing Kong	Proton acceleration by interplanetary shock waves with test particle simulations (140)
5:05	Shiyang Qi	Study of solar energetic particle event timescales associated with ICMEs with numerical simulations (142)
5:20	Gang Qin	A numerical simulation of solar energetic particle dropouts during impulsive Events (154)

5:35 Posters, refreshment

## Friday October 17

### Session 15. Mass Chain 1a (CMEs/Flares)

*Chair: Qiang Hu*

*Venue: Crystal Ballroom*

8:30	Jie Zhang**	An Overview on The Origin, Evolution and Earth Impact of Coronal Mass Ejections (116)
9:00	Daniel Baker*	Severe Space Weather: Solar Wind Coupling and Radiation Belt Response (211)
9:20	Dominique Fontaine*	Role of the Earth's bow shock in the interaction of coronal mass ejections with the Earth's environment (173)
9:40	Shi-tsan Wu*	Solar Storm Impact on Earth Environment: A Data-Driven Three-Dimensional Magnetohydrodynamic Simulation of the Storm Initiation (27)
10:00	Xin Cheng	Investigating the Onset of Two Successive Flux Rope Eruptions in the Same Solar Active Region (184)

10:15 Coffee break

### Session 16 Mass Chain 1b (HSS/CIR)

*Chair: Olga Khabarova*

*Venue: Crystal Ballroom*

10:35	Vania Jordanova**	High Speed Streams and their Impact on Earth (170)
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11:05	Yuri Yermolaev*	Comparison of impacts of CIR/HSS, Sheath and ICME on magnetic storm generation (198)
11:25	Gang Lu*	Effects of High-Speed Solar Wind Streams on the Magnetosphere and Ionosphere/Thermosphere: Similarities and Differences (82)
11:45	Kalevi Mursula	Occurrence and climate effects of high-speed solar wind streams over the Grand Modern Maximum (7)
12:00	Muneeza Ali	The Sonmiani geomagnetic field effects due to high speed solar wind stream emanating from coronal holes during 2010 (158)
12:15	Zhongwei Yang	Nonlinear Structures Produced by the Solar Wind Interaction with Earth's Bow Shock (119)

12:30 Lunch

### Parallel Sessions

#### Session 17.1 Mass Chain 1a (CMEs/Flares)

*Chair: Yuming Wang*

*Venue: Crystal Ballroom*

14:00	Victor Grechnev*	Observations of an Eruptive Flux Rope, CME Formation, and Associated Blast Wave (181)
14:20	Nada Al-Haddad	Distinguishing writhe from twist using multi-spacecraft measurements and numerical simulations (33)
14:35	Qiugang Zong	Spatiotemporal behavior of ULF waves excited by interplanetary shock and solar wind dynamic pressure impulses in the magnetosphere (36)
14:50	Nat Gopalswamy	Mild Space Weather during Solar Cycle 24 (62)
15:05	Yongliang Song	The effect of non-radial magnetic field on measuring helicity transfer rate (75)
15:20	Hongqi Zhang	Observational study of solar vector magnetic field and helicity (155)
15:35	Qiang Hu	Magnetic flux-rope structure of (I)CMEs characterized by the field-line twist and length

		distributions (95)
15:50	Tianran Sun	The chain response of the magnetospheric - and - ground magnetic field to interplanetary shocks (97)

16:05 Coffee break

### Session 18.1 Mass Chain 1a (CMEs/Flares)

*Chair: Pertti Mäkelä*

*Venue: Crystal Ballroom*

16:20	Rui Liu	Early Evolution of An Energetic Coronal Mass Ejection (99)
16:35	Ting Li	Slipping Magnetic Reconnection Triggering an Eruption of a Triangle-flag flux rope (20)
16:50	Yuming Wang	Plasma motion of magnetic clouds at 1 AU (129)
17:05	Noe Lugaz	Shocks inside CMEs: Properties and Geo-effectiveness (131)
17:20	Chin-chun Wu	Comparisons of characteristics of magnetic cloud and cloud-like structures during 1995-2012 (161)

17:35 **Closing session: Publication Plans, STP14**

### Session 17.2 Mass Chain 1b (HSS/CIR)

*Chair: Yuri Yermolaev*

*Venue: Opal Ballroom*

14:00	Takero Suzuki*	What determines properties of the solar wind? (163)
14:20	Alexei Dmitriev	High-speed solar wind streams and positive dayside ionospheric storms
14:35	Keiji Hayashi	Solar coronal structure in late 2013 obtained with time-relaxation MHD simulation and potential field model (94)
14:50	Wenbin Wang	The Effect of Solar Wind Corotation Interaction Regions on Earth's Thermosphere and Ionosphere (108)

15:05	Olga Khabarova	High-speed streams evolution and corresponding instabilities in the surrounding heliospheric plasma (166)
15:20	Mikhail Verigin	Interplanetary magnetic field pressure and magnetic field line stress contribution into the geomagnetopause stagnation point pressure (194)
15:35	Galina Kotova	3D modeling of the density distribution in the plasmasphere using the Interball-1 data base (196)
15:50	Zhengwei Cheng	IMF By-controlled FACs in the magnetotail during northward IMF (98)

16:05 Coffee break

**17:35 Closing Session: Publication Plans, STP14**

**Saturday October 18. Workshop to Analyze Sun-to-Earth MiniMax24 Events**

**Session 1: VarSITI Campaign Study.**

*Chair: Jie Zhang*

*Venue: White Jade Ballroom*

8:30	Alexis Rouillard**	Modeling the geoeffective Coronal Mass Ejections (35)
9:00	Kazuo Shiokawa	Middle-latitude auroras observed at Kamchatka during the three geomagnetic storms of March 9, 2012 and March 17 and June 1, 2013 (64)
9:15	Fang Shen	Kinematic Evolution of the 2012 July 12 CME from the Sun to the Earth: Observation-Constrained Three-Dimensional MHD Simulations (182)
9:30	Nariaki Nitta	How "stealthy" can be Earth-affecting eruptions? (71)
9:45	Suping Duan	Cluster Observations of energetic O <sup>+</sup> ions correlated with ULF waves in the night-side high-latitude magnetosheath during a storm initial phase (92)

10:00 Coffee break

**Session 2: ISEST/MiniMax24 Overview.**

*Chair: Nat Gopalswamy*

*Venue: White Jade Ballroom*

10:30	Jie Zhang	Data Analysis of Earth-affecting CMEs: A Report from the ISEST/Minimax24 Data Working Group (115)
10:45	B Vrsnak, Y Wang <sup>1</sup>	A Report from the ISEST/Minimax24 Theory Group
11:00	Fang Shen	Numerical Analysis of Earth-affecting CMEs: A Report from the ISEST/Minimax24 Simulation Working Group (28)
11:15	David Webb	Study of Earth-affecting Solar CMEs: A Report from ISEST/Minimax24 Working Group 4 on Campaign Events (81)
11:30	Manolis Georgoulis	Near-Sun CME Magnetic Field and its Variation Through the Inner Heliosphere: A Proposed Modus Operandi for VarSITI's ISEST-MiniMax24 Working Group 5 (26)
11:45	Manuela Temmer, Nat Gopalswamy <sup>1</sup>	Report from the MiniMax24 Working Group of VarSITI's ISEST/MiniMax24 (4)

12:00 Lunch break <sup>1</sup>Presenter

### **Session 3: ISEST: Earth-Affecting Solar Transients.**

*Chair: David Webb*

*Venue: White Jade Ballroom*

14:00	Yihua Yan	Fine Structures of Microwave Bursts on 15 February 2011 Event in AR 11158 (76)
14:15	Phillip Hess	Combining Models, Theory and Observations to Reconstruct CME and Shock Morphology (76)
14:30	Chenglong Shen	Full-halo coronal mass ejections: Arrival at the Earth (102)
14:45	Li Feng	3D morphological reconstruction of CMEs and CME-driven shocks from SECCHI COR and HI1 Observations (50)
15:00	Xin Cheng	Formation of a Double-decker Magnetic Flux Rope in Solar Active Region 11520 (185)
15:15	Bei Zhu	Solar Energetic Particle Event Associated with the 2012 July 23 Extreme Storm (125)

15:30 Coffee break

**Session 4: MiniMax24: the Low Activity of Solar Cycle 24.**

*Chair: Alexis Rouillard*

*Venue: White Jade Ballroom*

16:00	John Richardson	The Solar Wind in the Recent Solar Cycle (48)
16:15	Yiding Chen	Geomagnetic Activity Effect on the Global Ionosphere during 2007–2009 Deep Solar Minimum (66)
16:30	Lilia Biktash	Cosmic rays, geomagnetic activity and global temperature variations during solar cycles 20-23 (104)
16:45	Alexander Mordvinov	Sunspot activity and reversal of polar fields in the current cycle 24 (187)
17:00	Jinpeng Han	Energetics Characteristics of the Super Magnetic Storm on November 20, 2003: 3D Global MHD Simulation (78)
17:15	Yongliang Zhang	Storm-time variations of thermospheric O/N <sub>2</sub> and NO (172)

**17:30 Adjourn**

**End of STP13**

