



THE 15TH RUSSIAN-CHINESE WORKSHOP ON SPACE WEATHER

September 9-13, 2024, Irkutsk, Russia

PROGRAM

September 9 (Monday)

08:00-09:00	REGISTRATION
09:00-10:30	Session 1-1 Convener: Sergey ANFINOGENTOV
09:00-10:00	OPENING
10:00-10:30	China-Russia Joint Research Center on Space Weather: 24 years of cooperation (plenary) Andrey MEDVEDEV, <i>ISTP SB RAS, Irkutsk, Russia</i>
10:30-11:00	Coffee-break
11:00-12:30	Session 1-2 Convener: Alexey KUZNETSOV
11:00-11:20	Introduction of International Meridian Circle Program and the Progress of Its Typical Demonstrations in Brazil (invited) Hui LI, <i>NSSC CAS, Beijing, China</i>
11:20-11:40	National Heliogeophysical Complex of RAS: Large Solar Telescope Opportunities for Solving Fundamental Problems of Solar Physics (invited) Dmitry KOLOBOV, <i>ISTP SB RAS, Irkutsk, Russia</i>
Section “Geoeffective processes on the Sun and in interplanetary space”	
11:40-11:55	On the Origin of the Open Magnetic Flux Problem in Heliosphere Mikhail DEMIDOV, <i>ISTP SB RAS, Irkutsk, Russia</i>
11:55-12:10	Forerunners and Effects of Powerful Solar Flares in Active Region 12673 in September, 2017 Alexey GOLOVKO, <i>ISTP SB RAS, Irkutsk, Russia</i>
12:10-12:25	Features of a Solar Flare Excess in May-June 2024 Sergey YAZEV, <i>ISTP SB RAS, Irkutsk, Russia</i>
12:30-13:30	Lunch

13:30-15:30

Session 1-3

Convener: Qinghe ZHANG

13:30-13:50

Introduction to China's Space Environment Ground-Based Monitoring Network - Chinese Meridian Project (CMP) (invited)

Jiyao XU, NSSC CAS, Beijing, China

13:50-14:10

Energy Release and Particle Acceleration in the 25th Cycle Solar Flares: Joint Observations with New Russian and Chinese Instruments (invited)

Alexey KUZNETSOV, ISTP SB RAS, Irkutsk, Russia

Section "Geoeffective processes on the Sun and in interplanetary space"

14:10-14:25

Study of the Microwave Source Positioning as a Possible Prediction Pattern of Major Solar Flares

Ivan MYSHYAKOV, ISTP SB RAS, Irkutsk, Russia

14:25-14:40

Multi-wavelength Analysis of Unusually Short Microwave Burst Preceding a Solar Flare

Sergey ANFINOGENTOV, ISTP SB RAS, Irkutsk, Russia

14:40-14:55

Study on the Multipeak Flare with High Turnover-Frequency Microwave Spectra with SRH Data

Zhao WU, Shandong University, Weihai, China

14:55-15:10

Spatial and Spectral Evolution of Microwave and X-Ray Sources during the Solar Limb Flare on February 5, 2023

Julia SHAMSUTDINOVA, ISTP SB RAS, Irkutsk, Russia

15:10-15:25

Neutral Line Associated Sources in Sympathetic Flare on 23 March, 2024

Anastasiia KUDRIAVTSEVA, ISTP SB RAS, Irkutsk, Russia

15:30-16:00

Coffee-break

16:00-18:00

Session 1-4

Convener: Mikhail DEMIDOV

Section "Geoeffective processes on the Sun and in interplanetary space"

16:00-16:15

Manifestations of Accelerated Electrons and Protons in the 20 January 2022 Major Solar Flare Observed with Fermi and the Siberian Radioheliograph

Alexey KOCHANOV, ISTP SB RAS, Irkutsk, Russia

16:15-16:30	<p>Mysteries of the 17 May 2012 Solar Event Responsible for GLE71: CME and Shock Wave Development and Statistical Hints from the Spectra of Near-Earth Protons</p> <p>Valentin KISELEV, <i>ISTP SB RAS, Irkutsk, Russia</i></p>
16:30-16:45	<p>Spatial Structure of Resonance Cavities in Sunspots</p> <p>Robert SYCH, <i>ISTP SB RAS, Irkutsk, Russia</i></p>
16:45-17:00	<p>The Rayleigh–Taylor Instability as a Trigger of Solar Flares</p> <p>Alexander STEPANOV, <i>CAO RAS, St. Petersburg, Russia</i></p>
17:00-17:15	<p>Diagnostics of Coronal Plasma Using the Exact Solution of the Evolution Equation for Slow Magnetoacoustic and Entropy Waves</p> <p>Dmitrii ZAVERSHINSKII, <i>Samara University, Samara, Russia</i></p>
17:15-17:30	<p>Time-Profile Study of Type III Solar Radio Bursts Using Parker Solar Probe</p> <p>Tulsi THAPA, <i>NSSC CAS, Beijing, China</i></p>
17:30-17:45	<p>Three-Minute Oscillations in Sunspot’s Superpenumbrae. Alfvénic or Sound?</p> <p>Andrei CHELPANOV, <i>ISTP SB RAS, Irkutsk, Russia</i></p>
17:45-18:00	<p>Multi-Spectral Stereoscopic Detection of the Solar Atmosphere and Its Precise Formation Heights</p> <p>Xiaofan WANG, <i>NAOC, Beijing, China</i></p>
18:00	<p>Conference Photo</p>
18:30	<p>Opening Reception</p>

September 10 (Tuesday)

09:00-10:30

Session 2-1

Convener: Jiyao XU

09:00-09:20

Recent Advances in the Research of Polar Cap Auroras *(invited)*

Qinghe ZHANG, *NSSC CAS, Beijing, China*

09:20-09:40

Optical Instruments of the National Heliogeophysical Complex of RAS *(invited)*

Roman VASILYEV, *ISTP SB RAS, Irkutsk, Russia*

Section “Physical processes in the middle and upper atmosphere”

09:40-09:55

Mid-Latitude Auroras with Data from Optical Instruments of the National Heliogeophysical Complex

Aleksandr BELETSKY, *ISTP SB RAS, Irkutsk, Russia*

09:55-10:10

Mid-Latitude Auroras during Geomagnetic Storms from Data by NHC Optical Instruments and Citizen Scientists

Tatyana SYRENOVA, *ISTP SB RAS, Irkutsk, Russia*

10:10-10:25

Space Environment Responses of Natural Disasters — the Coupling Mechanisms of Earth Inner Activities with Space Environment

Xuhui SHEN, *NSSC CAS, Beijing, China*

10:30-11:00

Coffee-break

11:00-12:30

Session 2-2

Convener: Alexey MOISEEV

Section “Physical processes in the middle and upper atmosphere”

11:00-11:15

Observation and Studies on Ionospheric Disturbances over China Using the Airglow All Sky Image Network

Jiyao XU, *NSSC CAS, Beijing, China*

11:15-11:30

Atmosphere Ionization as a Factor Uniting All Areas of IMCP Project Studies

Sergey PULINETS, *IKI RAS, Moscow, Russia*

11:30-11:45

The Influence of the Description of the Neutral Atmosphere on the Results of Modeling the Effects of the February 2022 Magnetic Storm

Ilya EDEMSKIY, *ISTP SB RAS, Irkutsk, Russia*

- 11:45-12:00 **Study of Ionospheric Irregularities Based on HF Radar Network Data**
Alexey OINATS, *ISTP SB RAS, Irkutsk, Russia*
- 12:00-12:15 **Simultaneous Observations of the IAR Wave Structure at the Mid-Latitude and Auroral Stations**
Alexander POTAPOV, *ISTP SB RAS, Irkutsk, Russia*
- 12:15-12:30 **Statistical Study on Plasma Velocities in the Bottom-Side Ionosphere over Low Latitude Hainan Station: Digisonde Measurement**
Guojun WANG, *NSSC CAS, Beijing, China*

12:30-13:30 **Lunch**

13:30-15:30 **Session 2-3**
Convener: Xuhui SHEN

Section “Effects of solar phenomena on magnetospheric processes”

- 13:30-13:45 **Space Weather Research in Yakutia**
Alexey MOISEEV, *SHICRA SB RAS, Yakutsk, Russia*
- 13:45-14:00 **ULF Wave Polarization Dynamics as a Key to Understand Wave-Particle Interactions in the Magnetosphere**
Aleksandr RUBTSOV, *ISTP SB RAS, Irkutsk, Russia*
- 14:00-14:15 **Observations of a Magnetospheric Wave Generated by a Moving Plasma Inhomogeneity**
Maksim CHELPANOV, *ISTP SB RAS, Irkutsk, Russia*
- 14:15-14:30 **Radial Structure of Magnetospheric Alfvén Waves and Phase Difference Between Transverse Magnetic Components: Two Case Studies**
Aleksandr VLASOV, *ISTP SB RAS, Irkutsk, Russia*
- 14:30-14:45 **The Mach Cone in Inhomogeneous Magnetosphere: Fast Magnetoacoustic Mode Generation by the Solar Wind Oblique Impulse on the Magnetopause**
Dmitri KLIMUSHKIN, *ISTP SB RAS, Irkutsk, Russia*
- 14:45-15:00 **Experimental Confirmation of the Existence of a Near-Equatorial Resonator for Magnetospheric Ion-Ion Hybrid Modes**
Olga MIKHAILOVA, *ISTP SB RAS, Irkutsk, Russia*

15:00-15:15

Algorithm for Determining Auroral Oval Boundaries Based on Various Manifestations of Auroral Activity

Yuri PENSKIKH, *ISTP SB RAS, Irkutsk, Russia*

15:30-16:00

Coffee-break

16:00-18:00

Poster Session

September 11 (Wednesday)

09:00-10:30

Session 3-1

Convener: Roman VASILYEV

09:00-09:20

National Heliogeophysical Complex of RAS: Radiophysical Complex for Ionospheric and Atmospheric Research *(invited)*

Andrey MEDVEDEV, *ISTP SB RAS, Irkutsk, Russia*

09:20-09:40

Lunar Orbit Small Satellite Array for an Interferometric Radio Telescope *(invited)*

Ji WU, *NSSC CAS, Beijing, China*

Section “Up-to-date methods and instruments for solar-terrestrial research within the framework of IMCP”

09:40-09:55

Gamma-Ray Spectrometers on Launched and Planned MSU Cubesats for Solar-Terrestrial Research

Vitalii BOGOMOLOV, *SINP MSU, Moscow, Russia*

09:55-10:10

DART: Daocheng Radio Telescope System and Early Results

Ji WU, *NSSC CAS, Beijing, China*

10:10-10:25

Global Navigation Satellite Systems for Space Weather Studies

Yury YASYUKEVICH, *ISTP SB RAS, Irkutsk, Russia*

10:30-11:00

Coffee-break

11:00-13:00

Session 3-2

Convener: Hui LI

Section “Up-to-date methods and instruments for solar-terrestrial research within the framework of IMCP”

11:00-11:15

Progress of Solar Observation in NAOC

Yuanyong DENG, *NAOC, Beijing, China*

11:15-11:30

SINP MSU Feasibilities for IMCP

Alexei DMITRIEV, *SINP MSU, Moscow, Russia*

11:30-11:45

Decimetric Type-IV Solar Radio Bursts and Daocheng T-array Decimetric Solar Radioheliograph (DATA)

Yao CHEN, *Shandong University, Weihai, China*

11:45-12:00

The New Radio Spectropolarimeters for Solar Activity Observations

Eugene IVANOV, *ISTP SB RAS, Irkutsk, Russia*

- 12:00-12:15 **Development of the Full-Disk Vector Magnetographs for the Meridian Project II**
Yingzi SUN, NAOC, Beijing, China
- 12:15-12:30 **Application of a Global MHD Simulation Model of Earth's Magnetosphere on Space Weather Forecasting**
Xiaocheng GUO, NSSC CAS, Beijing, China

12:30-13:30 **Lunch**

13:30-15:30 **Session 3-3**
Convener: Yury YASYUKEVICH

Section "Effects of solar phenomena on magnetospheric processes"

- 13:30-13:45 **Monitoring of Space Weather Effects with the Use of Moscow University Sozvezdie-270 Nano-satellite Constellation**
Sergey SVERTILOV, MSU, Moscow, Russia
- 13:45-14:00 **Characteristics of Magnetic Dipolarizations in the Vicinity of Substorm Onset Region Observed by THEMIS**
Suping DUAN, NSSC CAS, Beijing, China
- 14:00-14:15 **Substorm Effects on the Storm-Time Dst Variation**
Vladimir MISHIN, ISTP SB RAS, Irkutsk, Russia
- 14:15-14:30 **PiB and Airglow Bursts during Strong Storm-Time Geomagnetic Disturbances**
Roman MARCHUK, ISTP SB RAS, Irkutsk, Russia
- 14:30-14:45 **Long-Term Evolution of the Earth Radiation Belts during Solar Cycles 23 – 25**
Alexei DMITRIEV, SINP MSU, Moscow, Russia

Section "Physical processes in the middle and upper atmosphere"

- 14:45-15:00 **Electromagnetic ULF-ELF Response of Near-Earth Space to Man-Made, Atmospheric, and Magnetospheric Activity**
Natalia SAVELYEVA, IPE RAS, Moscow, Russia

15:00-15:15	Features of Determining the Electron Density Profile, Plasmasphere Electron Content and Transition Height at Irkutsk Incoherent Scatter Radar Denis KHABITUEV, <i>ISTP SB RAS, Irkutsk, Russia</i>
15:15-15:30	MUSER Observation and Joint Study with SRH Chengming TAN, <i>NSSC CAS, Beijing, China</i>
15:30-16:00	Coffee-break
16:00-18:00	Discussion: Russian-Chinese Joint Research Center on Space Weather and collaboration with IMCP Convener: Alexander ALTYNTSEV
18:00-18:30	CLOSING

September 12 (Thursday)

08:00-21:00	Visiting session: Siberian Radioheliograph
08:00-14:30	Travel from Irkutsk to Badary
14:30-16:30	Siberian Radioheliograph - New Opportunities for Studying the Solar Corona Sergey LESOVOI, <i>ISTP SB RAS, Irkutsk, Russia</i>
16:30-21:00	Travel from Badary to Irkutsk

September 13 (Friday)

09:00-20:00	Visiting session: Lake Baikal
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Poster session

Geoeffective processes on the Sun and in interplanetary space	
1-1	F10.7 Index Forecasting Using the Deep-Learning N-HITS Model Yaroslav EGOROV, <i>ISTP SB RAS, Irkutsk, Russia</i>
1-2	Cosmic Rays as a Tool for Heliosphere, Magnetosphere and Atmosphere Monitoring Marina KRAVTSOVA, <i>ISTP SB RAS, Irkutsk, Russia</i>
1-3	North-South Asymmetry of Solar Activity on the Growth Branch of Cycle 25 Elena ISAEVA, <i>ISU, Irkutsk, Russia</i>
1-4	The Structure of Coronal Mass Ejections Recorded by the K-Coronagraph at Mauna Loa Solar Observatory Hongqiang SONG, <i>Shandong University, Weihai, China</i>
1-5	Propagation of Hot Electrons in Jets in the June 29, 2012 Event Natalia MESHALKINA, <i>ISTP SB RAS, Irkutsk, Russia</i>
1-6	Recognition of Solar Flares in Microwave Observations Using Machine Learning Julia SHAMSUTDINOVA, <i>ISTP SB RAS, Irkutsk, Russia</i>
1-7	Forecast of the Course of Solar Activity in the 21st Century Galina MASHNICH, <i>ISTP SB RAS, Irkutsk, Russia</i>
Effects of solar phenomena on magnetospheric processes	
2-1	Timing of Geomagnetic Activations by PiB Type Pulsations Roman MARCHUK, <i>ISTP SB RAS, Irkutsk, Russia</i>
2-2	Midlatitude Bursts of PiB Geomagnetic Pulsations and Night Airglow during Stormtime Sawtooth Events Yulia KLIBANOVA, <i>IrSAU, Irkutsk, Russia</i>
2-3	Dynamics of Field-Aligned Currents in the Iijima-Potemra Region 1 during the Period of Stationary Magnetospheric Convection from the Magnetogram Inversion Technique Vyacheslav KAPUSTIN, <i>ISTP SB RAS, Irkutsk, Russia</i>
2-4	Velocity-Space Signatures of Resonant Energy Transfer between Whistler Waves and Electrons in the Earth's Magnetosheath Wence JIANG, <i>NSSC CAS, Beijing, China</i>
2-5	A Method for Estimating the Ionospheric Conductivity Based on Spacecraft Observations of Alfvén Waves in the Magnetosphere Ekaterina SMOTROVA, <i>ISTP SB RAS, Irkutsk, Russia</i>
2-6	Feasibility of the Frozen-In Field Line Condition in Magnetospheric Disturbances: Analysis of THEMIS-A Data Dmitry SHUBIN, <i>ISTP SB RAS, Irkutsk, Russia</i>

Physical processes in the middle and upper atmosphere

3-0	<p>Studying Large-scale Structures in the High-latitude Ionosphere at Meridional Chains of Stations on the Eurasian Continent <i>Geliy ZHEREBTSOV, ISTP SB RAS, Irkutsk, Russia</i></p>
3-1	<p>Analysis of Seismic and Ionospheric Disturbances Generated by the Explosion in North Korea on September 3, 2017 <i>Natalia PEREVALOVA, ISTP SB RAS, Irkutsk, Russia</i></p>
3-2	<p>Long-Term Variations in Temperature in Mesopause Region and F2-region Peak Electron Density over Eastern Siberia <i>Irina MEDVEDEVA, ISTP SB RAS, Irkutsk, Russia</i></p>
3-3	<p>Methods for Effective Joint Observation of Space Debris Using EISCAT, Qujing and Irkutsk Radars <i>Valentin LEBEDEV, ISTP SB RAS, Irkutsk, Russia</i></p>
3-4	<p>Variations in Chirp Signal Characteristics during X-ray Solar Flares: Experiment and Modeling <i>Vera IVANOVA, ISTP SB RAS, Irkutsk, Russia</i></p>
3-5	<p>Impact of a Lunar Gravitational Tide on Dynamical Processes in the Upper Stratosphere Based on ERA-5 Reanalysis Data <i>Denis KHABITUEV, ISTP SB RAS, Irkutsk, Russia</i></p>
<p>Up-to-date methods and instruments for solar-terrestrial research within the framework of IMCP</p>	
4-1	<p>Modeling Research on Atmospheric Optical Characteristics for Ground-Based Observations <i>Xuan QIAN, NAOC, Beijing, China</i></p>
4-2	<p>Environmental Conditions at the High-Altitude Ali Observatory for Space Weather Research <i>Yongqiang YAO, NAOC, Beijing, China</i></p>
4-3	<p>Parameterization of Optical Turbulence Characteristics over the Baikal Astrophysical Observatory <i>Artem SHIKHOVTSEV, ISTP SB RAS, Irkutsk, Russia</i></p>
4-4	<p>Climate Change and Its Impact on Atmospheric Characteristics along 120 E Meridian <i>Pavel KOVADLO, ISTP SB RAS, Irkutsk, Russia</i></p>