



შოთა რუსთაველის ეროვნული
ფონდის საერთაშორისო ფორუმი
SHOTA RUSTAVELI NATIONAL SCIENCE
FOUNDATION OF GEORGIA



ILIA STATE UNIVERSITY

Our mysterious Sun: magnetic coupling between solar interior and atmosphere

Monday, September 25

08:30-09:30 Registration

09:30-10:00 Welcome

10:00-11:00 Session I: Future space missions and ground-based telescopes

10:00-10:25	Holly Gilbert	Solar Orbiter: Joint Mission to Study the Sun	Invited talk
10:30-10:55	Manuel Collados	The European Solar Telescope: the future of European ground-based solar physics	Invited talk

11:00-11:45 Coffee break and poster view

11:45-13:00 Session II: Solar dynamo, activity and magnetic coupling of interior and atmosphere

11:45-12:15	Mausumi Dikpati	Global MHD tachocline instabilities	Invited review
12:20-12:35	Kirill Kuzanyan	Tilt and Helicity of Solar Active Regions: theoretical mechanism and observational regularities	
12:40-12:55	Andrey Tlatov	Formation of a polar magnetic field in a cycle 24	

13:00-15:00 Lunch break

15:00-16:00 Session II: Solar dynamo, activity and magnetic coupling of interior and atmosphere

15:00-15:15	Laurent Gizon	Equatorial Rossby waves in the solar interior	
15:20-15:35	Eka Gurgenashvili	North-south Asymmetry in Rieger-type Periodicity during Solar Cycles 19-23	
15:40-15:55	Teimuraz Zaqarashvili	Magneto-Rossby waves in the solar tachocline	

16:00-16:30 Coffee break and poster view

16:30-18:05 Session III: Convection and Helioseismology

16:30-17:00	Mark Miesch	The Convection Conundrum: Mystery and Intrigue Below the Solar Surface	Invited review
17:05-17:20	Chris Hanson	The state of the art: Inversions for flows in the solar interior	
17:25-17:40	Hannah Schunker	Statistical analysis of the evolution of active region tilt angles	
17:45-18:00	Sushanta Ttripathy	Magnetoseismic Study of Active Regions	

19:30 PM Welcome Reception



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Tuesday, September 26

09:15-10:30 Session IV: Photospheric magnetism

09:15-09:45	Sami Solanki	Photospheric Magnetism	Invited review
09:50-10:05	Nataliia Shchukina	Spectropolarimetric diagnostics of photospheric magnetic fields from the Hanle and Zeeman effects	
10:10-10:25	Robertus Erdelyi	MHD waves in asymmetric waveguides	

10:30-11:40 Coffee break and poster view

11:40-13:00 Session IV: Photospheric magnetism

11:40-11:55	Arnold Hanslmeier	Tomography of the lower solar atmosphere	
12:00-12:15	Peter Leitner	Tracking of photospheric shock waves in computational fluid dynamics data by means of post-processing detection algorithms based on edge detection and shock surface normals computation	
12:20-12:35	David Kuridze	Spectropolarimetric inversions of the Ca 8542 and Fe I 6173 Å lines in a M-class solar flare	
12:40-12:55	Tamar Chaghiashvili	Photospheric responses during high-energy flares	

13:00-15:00 Lunch break

15:00-16:40 Session V: Chromospheric structure and dynamics

15:00-15:30	Jaime De la Cruz Rodriguez	The chromosphere: structure and dynamics	Invited review
15:35-15:50	Mats Carlsson	Recent developments in modelling of the chromosphere	
15:55-16:15	Nabil Freij	QSEBs with co-spatial IRIS Bursts	Invited talk
16:20-16:35	Sara Esteban Pozuelo	Polarization in penumbral microjets	

16:40-17:10 Coffee break and poster view

17:10-18:35 Session V: Chromospheric structure and dynamics

17:10-17:30	Marco Stangalini	Polarized Kink Waves in Magnetic Elements: Evidence for Chromospheric Helical Waves	Invited talk
17:35-17:50	Kris Murawski	Numerical model of a partially-ionized solar atmosphere	
17:55-18:10	Rahul Sharma	Dynamical response of 3D spicular waveguides to the magnetohydrodynamical wave-mode(s)	
18:15-18:30	Nana Shatashvili	Magneto-Fluid Coupling in Dynamic Finely Structured Solar Atmosphere – Theory and Simulation	



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Wednesday, September 27

09:15-10:50 Session VI: Magnetic coupling in the solar atmosphere

09:15-09:45	Bart De Pontieu	Interface Region Imaging Spectrograph views of how the solar atmosphere is energized	Invited review
09:50-10:10	Abhishek Srivastava	High-frequency Torsional Alfvén Waves as an Energy Source in the Solar Corona	Invited talk
10:15-10:30	Roberto Soler	Propagation of Torsional Alfvén Waves from the Photosphere to the Corona: Reflection, Transmission, and Heating in Expanding Flux Tubes	
10:35-10:50	Teimuraz Kvernadze	Detection of the Hanle and Zeeman Effects in H α and He I D3 of the Solar Spicules using Polarization-holographic Imaging Stokes Polarimeter	

10:55-11:25 Coffee break and poster view

11:25-13:00 Session VI: Magnetic coupling in the solar atmosphere

11:25-11:55	Javier Trujillo Bueno	Prospects to Explore the Outer Solar Atmosphere with the Polarization of Ultraviolet Lines	Invited review
12:00-12:15	Isabell Piantchitsch	Numerical Simulation of Large Scale Amplitude Coronal Waves interacting with Corona Holes	
12:20-12:35	Błażej Kuzma	2-Fluid Numerical Simulations of Solar Spicules	
12:40-12:55	Julius Koza	Spectral Inversion of the H α and Ca II 8542 Å Lines Observed by SST/CRISP in Chromospheric Jets	

13:00-15:00 Lunch break

15:00-18:30 Excursion



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Thursday, September 28

09:15-10:45 Session VII: Solar corona

09:15-09:45	Therese Kucera	Solar Prominences - Structure and Origins	Invited review
09:50-10:05	José Luis Ballester	The temporal behaviour of MHD waves in a partially ionized prominence-like plasma: Effect of heating and cooling	
10:10-10:25	Aaron Hernandez-Perez	On the generation mechanisms of ribbons in a confined flare	
10:30-10:45	Pavel Kotrc	On the Measurement of Spectral Continua Flux in Solar Flares	

10:50-11:35 Coffee break and poster view

11:35-13:00 Session VII: Solar corona

11:35-11:55	Konstantinos Karampelas	Heating by transverse waves in 3D simulations of turbulent coronal loops	Invited talk
12:00-12:15	Charalambos Kanella	Radiative Cooling of Joule Heating Events in MHD Simulations of the Solar Corona	
12:20-12:35	Chris Nelson	The role of cancellation in driving small-scale transients and filling coronal loops	
12:40-12:55	Leon Ofman	The role of waves and turbulence in the solar wind plasma	

13:00-15:00 Lunch break

15:00-18:30 Visit wine cellar

20:00 Conference diner



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Friday, September 29

10:00-11:15 Session VIII: Solar wind

10:00-10:30	Rui Pinto	The solar wind: challenges for theory, modelling and observations	Invited review
10:35-10:50	Roberto Bruno	Magnetic Field Background Spectrum, from Fluid to Kinetic Scales, as Observed in the Solar Wind	
10:55-11:10	Grigol Gogoberidze	Very high frequency temperature spectrum in the solar wind	

11:15-11:55 Coffee break and poster view

11:55-13:00 Session VIII: Solar wind

11:55-12:15	Zoltan Vörös	In situ observations of magnetic reconnection in plasma turbulence	Invited talk
12:20-12:35	Tina Kahniashvili	Magnetohydrodynamic Turbulence and Its Application	
12:40-12:55	Bidzina Shergelashvili	The model of solar wind polytropic flow patterns	

13:00-15:00 Lunch break

15:00-16:35 Session: IX: Solar flares, CMEs and space weather

15:00-15:30	Francesca Zuccarello	Eruptive phenomena on the Sun	Invited review
15:35-15:50	Marianna Korsos	Novel flare forecasting in 3D solar active regions	
15:55-16:10	Aabha Monga	Fast CME associated with giant prominence eruption	
16:15-16:30	Irakli Mghebrishvili	Statistical relation of tornadoes to instability of hosting prominences	

16:35-17:05 Coffee break and poster view

17:05-18:10 Session IX: Solar flares, CMEs and space weather

17:05-17:25	David Tsiklauri	Particle-In-Cell, fully kinetic scale modelling of solar radio bursts based on non-gyrotropic and plasma emission mechanisms	Invited talk
17:30-17:45	Jordi Tuneu	Microwave and sub-mm radiation from energetic ion secondary particles	
17:50-18:05	Jaša Calogovic	Drag-Based Ensemble Model (DBEM): probabilistic model for heliospheric propagation of ICMEs	

18:10- Final remarks and close