

# **International Magnetosphere Coupling IV (IMC-IV) Workshop**

**Sunday, 2 June 2024 - Friday, 7 June 2024**

## **GFZ Programme**

# Sunday, 2 June 2024

**Registration: Name badge pick-up (optional) - House H (11:00 - 15:00)**

# Monday, 3 June 2024

**Registration: Name badge pick-up - House H (08:30 - 09:30)**

**Opening Words - Lecture Hall (09:30 - 10:00)**

-Conveners: Yuri Shprits

**Solar Wind and Magnetosphere - Lecture Hall (10:00 - 11:30)**

-Conveners: Tuija Pulkkinen; Daniel Baker

time	[id] title	presenter
10:00	[4] Introduction to mesoscale processes in the magnetotail (10 minutes)	BAKER, Dan
10:10	[5] Panelist: Mesoscale magnetosphere-ionosphere structuring (10 minutes)	KEPKO, Larry
10:20	[6] Panelist: From Bursty Bulk Flows to Substorm Wedgelets – What ionospheric signatures have told us? (10 minutes)	KAURISTIE, Kirsti
10:30	[7] Panelist: Coupling of tail mesoscale structures to auroral region processes (10 minutes)	SPANSWICK, Emma
10:40	[8] Panelist: Effect on solar wind fluctuations on magnetospheric response (10 minutes)	PULKKINEN, Tuija
10:50	[161] Polar cap dynamics during northward IMF (5 minutes)	HILL, Shannon
10:55	[9] Discussion (35 minutes)	

**Coffee Break - House H (11:30 - 11:45)**

**Plasmasphere, Ring Current, and Radiation Belts - Lecture Hall (11:45 - 13:15)**

-Conveners: Jerry Goldstein; Mary Hudson

time	[id] title	presenter
11:45	[10] Theoretical Modelling of the Radiation Belts: Wave-particle interactions, plasma density and strong diffusion (10 minutes)	HORNE, Richard
11:55	[162] Discussion (10 minutes)	
12:05	[11] Ring current and radiation belt contributions to mesoscale precipitation regions (10 minutes)	JAYNES, Allison
12:15	[163] Discussion (10 minutes)	
12:25	[12] Radiation belt acceleration during the geomagnetic storm of 24 March 1991 as a benchmark of an extreme space weather event within the SWIMMR Sat-Risk project (5 minutes)	DESAI, Ravindra
12:30	[164] Discussion (5 minutes)	
12:35	[13] Contribution of MeV Electron Precipitation to Radiation Belt Dropouts (5 minutes)	FREUND, Dominique
12:40	[165] Discussion (5 minutes)	
12:45	[14] Using electron pitch angle distributions to understand long-term radiation belt effects (5 minutes)	GREELEY, Ashley
12:50	[166] Discussion (5 minutes)	
12:55	[15] Drift phase structuring of the entire terrestrial radiation belts (5 minutes)	LEJOSNE, Solene
13:00	[167] Discussion (5 minutes)	

13:05	[282] Additional discussion time (10 minutes)	
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**Lunch Break - House H (13:15 - 14:30)****Cross-energy, Cross-scale, Mass Coupling and Transport - Lecture Room 1 (14:30 - 16:00)****-Conveners: Rumi Nakamura; David Hartley**

time	[id] title	presenter
14:30	[21] Magnetosheath Jets: Recent Advancements (10 minutes)	PLASCHKE, Ferdinand
14:40	[175] Discussion (10 minutes)	
14:50	[22] Magnetosheath high speed jets observed by Cluster and MMS (10 minutes)	ESCOUBET, Christophe
15:00	[174] Discussion (10 minutes)	
15:10	[23] Poleward Moving Alfvénic Power due to Transient Dayside Reconnection (5 minutes)	LOTKO, Willian
15:15	[176] Discussion (5 minutes)	
15:20	[24] Outflow and escape of terrestrial ionospheric heavy ions: Cluster advances and open questions (5 minutes)	DANDOURAS, Iannis
15:25	[178] Discussion (5 minutes)	
15:30	[25] Cross-scale processes in the transition region (5 minutes)	NAKAMURA, Rumi
15:35	[177] Discussion (5 minutes)	
15:40	[26] The morphology of the meso-scale inner-magnetosphere electric field and its role in plasma transport, M-I coupling, and ion outflows (10 minutes)	THALLER, Scott
15:50	[173] Discussion (10 minutes)	

**Plasmasphere, Ring Current, and Radiation Belts - Lecture Hall (14:30 - 16:00)****-Conveners: Jerry Goldstein; Mary Hudson**

time	[id] title	presenter
14:30	[16] Mesoscale Processes and their effect on the ring current build up: The Elusive Mode of Plasma Transport and the Measurements Needed to Bring it to Light (10 minutes)	GKIOULIDOU, Matina
14:40	[168] Discussion (10 minutes)	
14:50	[17] A new mechanism for early-time plasmaspheric refilling (10 minutes)	ILIE, Raluca
15:00	[169] Discussion (10 minutes)	
15:10	[18] A missing Dusk-side Loss Process in the Electron Ring Current (5 minutes)	HAAS, Bernhard
15:15	[171] Discussion (5 minutes)	
15:20	[19] The modified Versatile near-Earth environment of Radiation Belts and ring current 4D (VERB-4D) code (5 minutes)	HIMMELSBACH, Julia
15:25	[172] Discussion (5 minutes)	
15:30	[20] Global Validation of the Data-Assimilative VERB-3D Code for the Radiation Belts (5 minutes)	GARCÍA PEÑARANDA, Marina
15:35	[170] Discussion (5 minutes)	
15:40	[283] Additional discussion time (20 minutes)	

**Solar Wind and Magnetosphere - Lecture Room 2 (14:30 - 16:00)****-Conveners: Daniel Baker; Tuija Pulkkinen**

time	[id] title	presenter
14:30	[27] Introduction to Mesoscale processes at the bow shock, magnetosheath and magnetopause (10 minutes)	PULKKINEN, Tuija
14:40	[28] Panelist: Kinetic processes on the dayside of the magnetosphere: recent results from global hybrid-Vlasov simulations with Vlasiator (10 minutes)	KEMPF, Yann
14:50	[29] Panelist: MMS Observations of Extended Kelvin-Helmholtz Wave Activity and Associated Magnetic Reconnection Exhausts Near the Dawn Flank of the Magnetotail (10 minutes)	LENTZ, Christy
15:00	[30] Panelist: The Occurrence and Prevalence of Magnetic Reconnection in the Kelvin-Helmholtz Instability Under Various Solar Wind Conditions (10 minutes)	WILDER, Rick
15:10	[31] From multi-decadal solar wind modelling to real-time forecasting (5 minutes)	PINTO, Rui
15:15	[32] Solar wind influences on the occurrence of unusual magnetopause locations: Results from the THEMIS and CLUSTER spacecraft (5 minutes)	GRIMMICH, Niklas
15:20	[33] Discussion (40 minutes)	

**Coffee Break - House H (16:00 - 16:15)****Plasmasphere, Ring Current, and Radiation Belts - Lecture Hall (16:15 - 17:45)****-Conveners: Mary Hudson; Jerry Goldstein**

time	[id] title	presenter
16:15	[34] The influence of substorm activity on the ring current dynamics (10 minutes)	YUE, Chao
16:25	[181] Discussion (10 minutes)	
16:35	[35] Imaging Plasmaspheric Dynamics Using Radio Frequency Signals (10 minutes)	MALASPINA, David
16:45	[179] Discussion (10 minutes)	
16:55	[36] Plasmaspheric plumes : importance and dynamics (10 minutes)	DARROUZET, Fabien
17:05	[180] Discussion (10 minutes)	
17:15	[37] A new inner magnetosphere model designed for multiscale whole geospace modeling (5 minutes)	SCIOLA, Anthony
17:20	[182] Discussion (5 minutes)	
17:25	[284] Additional discussion time (20 minutes)	

**Space Weather and Applications - Lecture Room 1 (16:15 - 17:45)****-Conveners: Juha-Pekka Luntama; Terry Onsager**

time	[id] title	presenter
16:15	[38] A synergetic approach of physics-based and data-driven predictions of solar eruptions and space weather (10 minutes)	KUSANO, Kanya
16:25	[184] Discussion (10 minutes)	
16:35	[39] Flux-rope CMEs in Sun-to-Earth model chains (10 minutes)	POEDTS, Stefaan
16:45	[183] Discussion (10 minutes)	

16:55	[40] Two stages of solar eruption onset (5 minutes)	KLIEM, Bernhard
17:00	[186] Discussion (5 minutes)	
17:05	[41] Comparative Researches of Two Distinct Cosmic Ray Events (Forbush decrease and GLE event ) Caused by the Solar Eruptions during September, 2017 (5 minutes)	YU, Xiao Xia
17:10	[185] Discussion (5 minutes)	
17:15	[285] Additional discussion time (30 minutes)	

### **Waves and Wave-Particle Interactions - Lecture Room 2 (16:15 - 17:45)**

-Conveners: Yoshi Miyoshi; Ondrej Santolik

time	[id] title	presenter
16:15	[42] Statistical characterisation of EMIC/Pc1 waves in relation to the plasmopause based on a new Swarm L2 product (5 minutes)	BOZÓKI, Tamás
16:20	[191] Discussion (5 minutes)	
16:25	[43] Quasilinear and Nonlinear Interaction Between EMIC Waves and Ring Current Protons (5 minutes)	MA, Qianli
16:30	[190] Discussion (5 minutes)	
16:35	[44] EMIC wave occurrence and its dependence on geomagnetic conditions: Results from 7 years of Van Allen Probes observations (5 minutes)	USANOVA, Maria
16:40	[189] Discussion (5 minutes)	
16:45	[45] Observation of possible mode-conversion between EMIC and Magnetosonic waves in the outer magnetosphere (5 minutes)	OJHA, Biswajit
16:50	[188] Discussion (5 minutes)	
16:55	[46] ULF waves as the driver of pulsating proton precipitation and ionospheric disturbances via the modulation of EMIC waves (5 minutes)	YU, Yiqun
17:00	[192] Discussion (5 minutes)	
17:05	[47] Excitation of Second Harmonic Poloidal ULF Waves Through Drift-Bounce Resonance with Protons in the Magnetic Dip (5 minutes)	YUE, Chao
17:10	[193] Discussion (5 minutes)	
17:15	[48] First Observational Evidence of the Weak-to-strong Transition in Alfvénic Turbulence (5 minutes)	ZHAO, Siqi
17:20	[194] Discussion (5 minutes)	
17:25	[49] Investigating the Link Between Whistler-Mode Wave Properties and the Plasma Density (10 minutes)	HARTLEY, David
17:35	[187] Discussion (10 minutes)	

### **Ice Breaker - Foyer (18:00 - 19:30)**

## Tuesday, 4 June 2024

### Waves and Wave-Particle Interactions - Lecture Hall (10:00 - 11:30)

-Conveners: Yoshi Miyoshi; Ondrej Santolik

time	[id] title	presenter
10:00	[51] The effect of energy diffusion in the radiation belts (5 minutes)	GLAUERT, Sarah
10:05	[242] Discussion (5 minutes)	
10:10	[52] Resolution of some problems in using the quasilinear theory for calculation of diffusion coefficients in heliophysics (5 minutes)	CUNNINGHAM, Gregory
10:15	[50] Recent developments in quasi-linear and nonlinear approaches to wave-particle interactions (10 minutes)	ALBERT, Jay
10:25	[244] Discussion (15 minutes)	
10:40	[53] Waves in the Inner-magnetosphere and Their Effects on Radiation Belt Electrons (WIRE) (10 minutes)	WANG, Dedong
10:50	[243] Discussion (10 minutes)	
11:00	[54] Response of energetic electron population to chorus waves with varying degrees of coherence (5 minutes)	HANZELKA, Miroslav
11:05	[240] Discussion (5 minutes)	
11:10	[55] The challenge to understand the zoo of particle transport regimes during resonant wave-particle interactions for given survey-mode wave spectra (5 minutes)	ALLANSON, Oliver
11:15	[239] Discussion (5 minutes)	
11:20	[56] Simultaneous enhancement of non-linear chorus and EMIC waves (5 minutes)	MIYOSHI, Yoshizumi
11:25	[238] Discussion (5 minutes)	

### Coffee Break - House H (11:30 - 11:45)

### Ionosphere, Thermosphere, Magnetosphere - Lecture Hall (11:45 - 13:15)

-Conveners: Miriam Sinnhuber; Claudia Stolle

time	[id] title	presenter
11:45	[57] EISCAT_3D in the European Arctic Science Landscape (10 minutes)	ULICH, Thomas
11:55	[249] Discussion (10 minutes)	
12:05	[58] A new view on conjugate features in the two. hemispheres of field-aligned currents and the auroral electrojet (5 minutes)	LÜHR, Hermann
12:10	[246] Discussion (5 minutes)	
12:15	[59] Quantifying the contribution of FAC mesoscale structures to the overall FAC patterns during a magnetospheric substorm (5 minutes)	GASPARINI, Sara
12:20	[247] Discussion (5 minutes)	
12:25	[60] Signatures of Magnetosphere-Ionosphere Coupling in the Subauroral Topside Ionosphere (10 minutes)	HEILIG, Balazs
12:35	[250] Discussion (10 minutes)	
12:45	[61] Decomposing the DP1 and DP2 current system contributions to substorm-like intensifications in SML (5 minutes)	LAO, Christian

12:50	[245] Discussion (5 minutes)	
12:55	[62] Thermal coupling in the ionosphere-thermosphere-plasmasphere system (10 minutes)	MARUYAMA, Naomi
13:05	[248] Discussion (10 minutes)	

### **Lunch Break - House H (13:15 - 14:30)**

### **Cross-energy, Cross-scale, Mass Coupling and Transport - Lecture Room 2 (14:30 - 16:00)**

-Conveners: David Hartley; Rumi Nakamura

time	[id] title	presenter
14:30	[76] Particle Energization by Turbulent Electric Fields in Fast Earthward Flows and Its Implications for the Dynamics of the Inner Magnetosphere (10 minutes)	USANOVA, Maria
14:40	[268] Discussion (10 minutes)	
14:50	[77] Energetic particle injections as a source of waves and ring current and radiation belt particles (10 minutes)	TURNER, Drew
15:00	[269] Discussion (10 minutes)	
15:10	[78] Low-Density Plasma Conditions as a Key Catalyst for Electron Acceleration in the Van Allen Radiation Belts (5 minutes)	SHPRITS, Yuri
15:15	[267] Discussion (5 minutes)	
15:20	[79] Remote Sensing Cross-Scale Magnetotail Convection from Low Earth Orbit (10 minutes)	UKHORSKIY, Sasha
15:30	[270] Discussion (10 minutes)	
15:40	[80] Can the Magnetotail Produce Relativistic Electrons? (5 minutes)	RUNOV, Andrei
15:45	[266] Discussion (5 minutes)	
15:50	[287] Additional discussion time (10 minutes)	

### **Ionosphere, Thermosphere, Magnetosphere - Lecture Room 1 (14:30 - 16:00)**

-Conveners: Miriam Sinnhuber; Claudia Stolle

time	[id] title	presenter
14:30	[70] Space Weather monitoring and prediction for GNSS users (10 minutes)	BERDERMANN, Jens
14:40	[259] Discussion (10 minutes)	
14:50	[71] Initial results of TREx data and inversion: Implication on storm-time ionospheric and thermospheric dynamics (5 minutes)	LIANG, Jun
14:55	[262] Discussion (5 minutes)	
15:00	[72] A neural network model of electron temperature based on CHAMP observations (5 minutes)	SMIRNOV, Artem
15:05	[264] Discussion (5 minutes)	
15:10	[140] Persistent impact of the solar wind on the ionosphere (5 minutes)	BORRIES, Claudia
15:15	[265] Discussion (5 minutes)	
15:20	[73] Thermosphere-Ionosphere Observing System Simulation Experiments with Physics-based Dynamic Mode Decomposition (5 minutes)	KODIKARA, Timothy
15:25	[261] Discussion (5 minutes)	



15:30	[74] An empirical model of the occurrence rate of low latitude post-sunset plasma irregularities derived from CHAMP and Swarm magnetic observations (5 minutes)	STOLLE, Claudia
15:35	[263] Discussion (5 minutes)	
15:40	[75] The International Reference Ionosphere (IRI) – Current Status and Plans for the Future (5 minutes)	BILITZA, Dieter
15:45	[260] Discussion (5 minutes)	
15:50	[286] Additional discussion time (10 minutes)	

### **Waves and Wave-Particle Interactions - Lecture Hall (14:30 - 16:00)**

-Conveners: Yoshi Miyoshi; Ondrej Santolik

time	[id] title	presenter
14:30	[63] VLF wave particle interaction status and challenges from the scope of radiation belt modeling (10 minutes)	BOURDARIE, Sebastien
14:40	[257] Discussion (10 minutes)	
14:50	[64] Effects of chorus on radiation belts under disturbed conditions (5 minutes)	SANTOLIK, Ondrej
14:55	[254] Discussion (5 minutes)	
15:00	[66] Fine Inner Structure of Quasiperiodic Emissions and Magnetospheric Line Radiation (10 minutes)	NEMEC, Frantisek
15:10	[251] Discussion (10 minutes)	
15:20	[67] Quasi-periodic Emissions in Saturn's magnetosphere and Their Effects on Electrons (5 minutes)	TENG, Shangchun
15:25	[255] Discussion (5 minutes)	
15:30	[68] Lightning-driven MeV electron microbursts in the inner radiation belt (5 minutes)	BLUM, Lauren
15:35	[258] Discussion (5 minutes)	
15:40	[69] Electron Scattering by Electrostatic Electron Cyclotron Harmonic Waves During Storm-Time (5 minutes)	STOLL, Katja
15:45	[256] Discussion (5 minutes)	

### **Coffee Break - House H (16:00 - 16:15)**

### **Ionosphere, Thermosphere, Magnetosphere - Lecture Room 1 (16:15 - 17:45)**

-Conveners: Claudia Stolle; Miriam Sinnhuber

time	[id] title	presenter
16:15	[88] The high energy tail of precipitating electrons (10 minutes)	NESSE, Hilde
16:25	[271] Discussion (10 minutes)	
16:35	[89] Role of Subauroral Polarization Streams (SAPS) in Deep Injections of Energetic Particles into the Inner Magnetosphere (5 minutes)	ZHAO, Hong
16:40	[274] Discussion (5 minutes)	
16:45	[90] A statistical study on the high-latitude lower thermospheric response to geomagnetic activity based on 21 years of TIMED/SABER observations (10 minutes)	YAMAZAKI, Yosuke
16:55	[272] Discussion (10 minutes)	

17:05	[91] Atmospheric impact of precipitating magnetospheric electrons (5 minutes)	SINNHUBER, Miriam
17:10	[273] Discussion (5 minutes)	
17:15	[288] Additional discussion time (30 minutes)	

### **Plasmasphere, Ring Current, and Radiation Belts - Lecture Hall (16:15 - 17:45)**

**-Conveners: Mary Hudson; Jerry Goldstein**

time	[id] title	presenter
16:15	[81] Open questions in ion outflow and the source of magnetospheric plasma (10 minutes)	GLOCER, Alex
16:25	[275] Discussion (10 minutes)	
16:35	[82] Global modeling of transport in the magnetosphere: The large effect of small scales (5 minutes)	SORATHIA, Kareem
16:40	[278] Discussion (5 minutes)	
16:45	[83] Evaluating the uncertainties in global MHD and Test-Particle simulations of the Earth's radiation belts (5 minutes)	TONG, Yihui
16:50	[277] Discussion (5 minutes)	
16:55	[84] Earth's ultrarelativistic electron acceleration: current understanding and future exploration (5 minutes)	ZHAO, Hong
17:00	[280] Discussion (5 minutes)	
17:05	[85] The Role of Local Acceleration and Radial Diffusion in multi-MeV Electron Enhancements (5 minutes)	SAIKIN, Anthony
17:10	[281] Discussion (5 minutes)	
17:15	[86] Characteristics of electron microburst precipitation: recent results and upcoming missions (5 minutes)	MILLAN, Robyn
17:20	[279] Discussion (5 minutes)	
17:25	[87] Understanding loss drivers in Earth's outer radiation belt during solar wind pressure enhancements: Observations and simulations (5 minutes)	WANG, Xiaoyu
17:30	[276] Discussion (5 minutes)	
17:35	[291] Additional discussion time (10 minutes)	

### **Solar Wind and Magnetosphere - Lecture Room 2 (16:15 - 17:45)**

**-Conveners: Daniel Baker; Tuija Pulkkinen**

time	[id] title	presenter
16:15	[92] Introduction to solar wind structures and their interaction with the magnetosphere (10 minutes)	BAKER, Daniel
16:25	[93] Panelist: Substorm feedback on solar wind - magnetosphere coupling (10 minutes)	BRENNER, Austin
16:35	[94] Panelist: Energetic electron/ion distribution of the inner magnetosphere associated with CME/CIR storms (10 minutes)	MIYOSHI, Yoshi
16:45	[95] Panelist: Flux-rope CMEs in Sun-to-Earth model chains (10 minutes)	POEDTS, Stefaan
16:55	[96] Panelist: Latest results on solar wind forcing of magnetospheric processes (10 minutes)	BAKER, Dan
17:05	[97] Forecasting Solar Wind Speed with Solar Images (5 minutes)	COLLIN, Daniel

17:10 [289] Discussion (35 minutes)

**Poster session - Foyer (18:00 - 19:30)**

[id] title	presenter	board
<b>[145] Solar Energetic Proton Access and Trapping in the Inner Magnetosphere with FLC Scattering Loss (1h 30m)</b>	HUDSON, Mary	
<b>[146] TBD (1h 30m)</b>	GOLDSTEIN, Jerry	
<b>[149] Simulations of the inner magnetospheric energetic electrons using the IMPTAM-VERB coupled model (1h 30m)</b>	CASTILLO, Angelica M.	
<b>[147] Preliminary Findings from a Kinetic-MHD Coupled Model of Ring Current Dynamics (1h 30m)</b>	BARAN ÖKTEN, Mehmet	
<b>[151] Extending the Kp-like, open-ended, high-cadence geomagnetic Hpo indices back until 1985 to include extreme events in 1989-1992 (1h 30m)</b>	KERVALISHVILI, Guram	
<b>[148] An operational machine- learning model of the plasma density in the plasmasphere (1h 30m)</b>	BIANCO, Stefano	
<b>[150] Ring Current Electron Precipitation During the 17 March 2013 Geomagnetic Storm (1h 30m)</b>	GRISHINA, Alina	
<b>[152] A new forecast model of geomagnetic Hpo indices based on machine learning: work in progress (1h 30m)</b>	KERVALISHVILI, Guram	
<b>[155] Global Validation of Data-Assimilative Ring Current and Plasmasphere Simulations (1h 30m)</b>	HAAS, Bernhard	
<b>[153] New space weather observations in Antarctica: the magnetometer, ULF, riometer and all-sky imager at Neumayer station (1h 30m)</b>	MATZKA, Jürgen	
<b>[156] Radiation Belt Modeling with Data Assimilation (1h 30m)</b>	GARCÍA PEÑARANDA, Marina	
<b>[157] Developing Chorus Wave Models Using Van Allen Probe and Arase Data (1h 30m)</b>	ROY, Alwin	
<b>[159] Acceleration of radiation belt electrons by chorus waves in nonlinear and quasilinear simulations (1h 30m)</b>	HANZELKA, Miroslav	
<b>[160] Modelling magnetopause shadowing in 4D drift-resolved Salammbô simulations (1h 30m)</b>	KIRAZ, Rabia	
<b>[154] Solar Wind Speed Prediction: Analysis and Evaluation (1h 30m)</b>	COLLIN, Daniel	
<b>[158] Sensitivity of ring current ion modeling to plasmasphere density (1h 30m)</b>	HIMMELSBACH, Julia	

## Wednesday, 5 June 2024

### **Mission Synergy - Lecture Hall (09:30 - 11:00)**

-Conveners: C. Philippe Escoubet; Matt Taylor; Matina Gkioulidou; Larry Kepko

time	[id] title	presenter
09:30	[98] The Aurora mission: research and operations (10 minutes)	AMAYA, Jorge
09:40	[223] Discussion (10 minutes)	
09:50	[99] Magnetospheric Auroral Asymmetry Explorer (MAAX) (10 minutes)	WELLING, Dan
10:00	[222] Discussion (10 minutes)	
10:10	[100] ROARS: Revealing Orbital and Atmospheric Responses to Solar activity – A candidate ESA multi spacecraft mission to probe Magnetosphere-Ionosphere-Thermosphere interactions (5 minutes)	DESAI, Rav
10:15	[225] Discussion (5 minutes)	
10:20	[101] SMILE (10 minutes)	FORSYTH, Colin
10:30	[224] Discussion (10 minutes)	
10:40	[102] The Cross-scale INvestigation of Earth's Magnetotail and Aurora (CINEMA) Mission Concept (10 minutes)	MILAN, Robyn
10:50	[221] Discussion (10 minutes)	

### **Coffee Break - House H (11:00 - 11:15)**

### **Space Weather and Applications - Lecture Hall (11:15 - 12:45)**

-Conveners: Terry Onsager; Juha-Pekka Luntama

time	[id] title	presenter
11:15	[103] The future of space weather modelling - combining models and data to meet our needs (10 minutes)	JACKSON, David
11:25	[228] Discussion (10 minutes)	
11:35	[104] Data-Driven Discovery of Fokker-Planck Equation for the Earth's Radiation Belts Electrons Using Physics-Informed Neural Networks (10 minutes)	CAMPOREALE, Enrico
11:45	[229] Discussion (10 minutes)	
11:55	[105] Design of OSE and OSSE for Earth's radiation belts (10 minutes)	SCHILLER, Quintin
12:05	[227] Discussion (10 minutes)	
12:15	[106] Future space weather verification at the Met Office (10 minutes)	BINGHAM, Suzy
12:25	[226] Discussion (10 minutes)	
12:35	[290] Additional discussion time (10 minutes)	

### **Agency Talks: NASA - Lecture Hall (12:45 - 13:15)**

time	[id] title	presenter
12:45	[143] TBD (30 minutes)	WESTLAKE, Joseph

### **Lunch Break - House H (13:15 - 14:30)**

**Planetary Magnetospheres and Other Bodies - Lecture Room 2 (14:30 - 16:00)****-Conveners: Drew Turner; Emma Woodfield**

time	[id] title	presenter
14:30	[111] MI-Coupling in Jupiter's internally mass-loaded and rotationally driven magnetosphere (10 minutes)	SAUR, Joachim
14:40	[236] Discussion (10 minutes)	
14:50	[112] Coupling between Martian magnetosphere and ionosphere: a current perspective (5 minutes)	GAO, Jiawei
14:55	[235] Discussion (5 minutes)	
15:00	[113] TBD (10 minutes)	GKIOULIDOU, Matina
15:10	[237] Discussion (10 minutes)	
15:20	[114] Long-term Enhancing of Jupiter's Electrostatic Waves Diagnostic of Io's Volcanism (5 minutes)	LONG, Minyi
15:25	[234] Discussion (5 minutes)	
15:30	[292] Additional discussion time (30 minutes)	

**Space Weather and Applications - Lecture Room 1 (14:30 - 16:00)****-Conveners: Juha-Pekka Luntama; Terry Onsager**

time	[id] title	presenter
14:30	[107] Prediction of Adverse effects of Geomagnetic storms and Energetic Radiation (PAGER) (10 minutes)	SHPRITS, Yuri
14:40	[231] Discussion (10 minutes)	
14:50	[108] Advanced Charging Risk Forecast Service, further beyond H2020/PAGER (5 minutes)	FOREST, Julien
14:55	[232] Discussion (5 minutes)	
15:00	[109] Filtering applications for the radiation belts (5 minutes)	CASTILLO, Angelica Maria
15:05	[230] Discussion (10 minutes)	
15:15	[110] Detection of solar QBO-like signals in earth's magnetic field using 40 years of GOES mission data (5 minutes)	INCEOGLU, Fadil
15:20	[233] Discussion (5 minutes)	
15:25	[293] Additional discussion time (35 minutes)	

**Waves and Wave-Particle Interactions - Lecture Hall (14:30 - 16:00)****-Conveners: Ondrej Santolik; Yoshi Miyoshi****Group Picture - House H (16:00 - 16:05)****Coffee Break - House H (16:05 - 16:20)****Topical Discussion - Heliophysics and Space Weather in Germany - Lecture Room 1 (16:20 - 17:20)****Banquet (18:30 - 22:00)**

# Thursday, 6 June 2024

## Plasmasphere, Ring Current, and Radiation Belts - Lecture Hall (10:00 - 11:30)

-Conveners: Jerry Goldstein; Mary Hudson

time	[id] title	presenter
10:00	[120] Cold Electrons and Electromagnetic Waves in the Plasmasphere With Application to Wave-Particle Interactions and Active Experiments (10 minutes)	RIPOLI, Jean-Francois
10:10	[204] Discussion (10 minutes)	
10:20	[121] Radiation belt electron loss from an observational perspective (10 minutes)	BLUM, Lauren
10:30	[205] Discussion (10 minutes)	
10:40	[141] Modelling magnetopause shadowing in 4D drift-resolved Salammbô simulations (5 minutes)	KIRAZ, Rabia
10:45	[201] Discussion (5 minutes)	
10:50	[122] Distribution of seed electron phase space density minima in Earth's radiation belts (5 minutes)	DROZDOV, Alexander
10:55	[202] Discussion (5 minutes)	
11:00	[123] Validation of model results in response to the COSPAR ISWAT challenge (5 minutes)	WANG, Dedong
11:05	[203] Discussion (5 minutes)	
11:10	[124] Electron Precipitation into the South Atlantic Anomaly During Geomagnetic Storms (5 minutes)	GRISHINA, Alina
11:15	[200] Discussion (5 minutes)	
11:20	[295] Additional discussion time (10 minutes)	

## Coffee Break - House H (11:30 - 11:45)

## Cross-energy, Cross-scale, Mass Coupling and Transport - House H (11:45 - 13:15)

-Conveners: David Hartley; Rumi Nakamura

time	[id] title	presenter
11:45	[125] The cross-energy dynamics of O <sup>+</sup> during geomagnetic storms (10 minutes)	KISTLER, Lynn
11:55	[208] Discussion (10 minutes)	
12:05	[126] The effect of the plasma sheet ion composition on the ring current heating of the plasmasphere and ionosphere (10 minutes)	FERRADAS, Cristian
12:15	[207] Discussion (10 minutes)	
12:25	[127] The controversial role of heavy ions in the dynamics of the magnetosphere (10 minutes)	KRONBERG, Elena
12:35	[206] Discussion (10 minutes)	
12:45	[128] GIAANT: geospace ion acceleration and transport in the 0 eV to 1 keV range (10 minutes)	GOLDSTEIN, Jerry
12:55	[209] Discussion (10 minutes)	
13:05	[296] Additional discussion time (10 minutes)	

**Lunch Break - House H (13:15 - 14:30)****Topical Discussion - Magnetospheric Physics and Heliophysics in Europe - Lecture Hall (14:30 - 16:00)****Coffee Break - House H (16:00 - 16:15)****Mission Synergy - Lecture Hall (16:15 - 17:45)****-Conveners: C. Philippe Escoubet; Larry Kepko; Matt Taylor; Matina Gkioulidou**

time	[id] title	presenter
16:15	[129] MMS (10 minutes)	PETRINEC, Steven
16:25	[211] Discussion (10 minutes)	
16:35	[130] HelioSwarm (10 minutes)	CHEN, Li-Jen
16:45	[212] Discussion (10 minutes)	
16:55	[131] Plasma Observatory (10 minutes)	MARCUCCI, Maria Federica
17:05	[210] Discussion (10 minutes)	
17:15	[297] Additional discussion time (30 minutes)	

**Planetary Magnetospheres and Other Bodies - Lecture Room 2 (16:15 - 17:45)****-Conveners: Emma Woodfield; Drew Turner**

time	[id] title	presenter
16:15	[136] Radiation belt dynamics driven by plasma flows: insights from Jupiter and Saturn (10 minutes)	ROUSSOS, Elias
16:25	[220] Discussion (10 minutes)	
16:35	[137] Dayside reconnection at Saturn and its influence on mass circulation (10 minutes)	SCIOLA, Anthony
16:45	[219] Discussion (10 minutes)	
16:55	[138] Injection-driven rotational magnetospheric periodicity revealed at Saturn through combined MHD and test particle simulations. (10 minutes)	CAGGIANO, Joe
17:05	[218] Discussion (10 minutes)	
17:15	[139] Generation and Impacts of Whistler-mode Waves during Energetic Electron Injections in Jupiter's Outer Radiation Belt (5 minutes)	MA, Qianli
17:20	[217] Discussion (5 minutes)	
17:25	[299] Additional discussion time (20 minutes)	

**Space Weather and Applications - Lecture Room 1 (16:15 - 17:45)****-Conveners: Terry Onsager; Juha-Pekka Luntama**

time	[id] title	presenter
16:15	[132] Thermospheric Densities: Challenges, Limitations, and Future Prospects (10 minutes)	TZAMALI, Myrto
16:25	[213] Discussion (10 minutes)	
16:35	[133] Orbital Space Weather: the challenge of collision avoidance in an increasingly congested Low Earth Orbit regime (10 minutes)	MARUYAMA, Naomi
16:45	[214] Discussion (10 minutes)	

16:55	[134] Operational real-time forecast of Kp/Hp indices and plasma density in the plasmasphere (5 minutes)	BIANCO, Stefano
17:00	[215] Discussion (5 minutes)	
17:05	[135] A Probabilistic Auroral Location Forecast derived from Far-Ultraviolet Auroral Boundaries and Geomagnetic Activity (5 minutes)	FORSYTH, Colin
17:10	[216] Discussion (5 minutes)	
17:15	[298] Additional discussion time (30 minutes)	



# Friday, 7 June 2024

## Agency Talks: JAXA (online) - Lecture Hall (09:30 - 10:00)

time	[id] title	presenter
09:30	[144] TBD (30 minutes)	SAITO, Yoshifum

## Planetary Magnetospheres and Other Bodies - Lecture Hall (10:00 - 11:30)

-Conveners: Drew Turner; Emma Woodfield

time	[id] title	presenter
10:00	[115] A Comparison of Solar Wind-Planetary Interactions Throughout the Heliosphere (10 minutes)	DIBRACCIO, Gina
10:10	[197] Discussion (10 minutes)	
10:20	[116] Plasma wind interaction with astrophysical bodies from 16 Psyche and the Moon to Mercury, Mars, and Saturn (5 minutes)	CHEN, Li-Jen
10:25	[196] Discussion (5 minutes)	
10:30	[117] Modeling of Saturn's radiation environment using the VERB code (10 minutes)	DROZDOV, Alexander
10:40	[199] Discussion (10 minutes)	
10:50	[118] A comparison of wave-particle interactions at Saturn, Jupiter and the Earth. (5 minutes)	WOODFIELD, Emma
10:55	[195] Discussion (5 minutes)	
11:00	[119] Whistler-mode wave emissions from Europa and consequent electron precipitation (10 minutes)	HAO, Yixin
11:10	[198] Discussion (10 minutes)	
11:20	[294] Additional discussion time (10 minutes)	

## Coffee Break - House H (11:30 - 11:45)

## Discussion - Lecture Hall (11:45 - 13:15)

## Lunch Break - House H (13:15 - 14:30)

## Discussion, reports from the discussion leaders, and closing words. - Lecture Hall (14:30 - 16:00)