

“Quantitative Assessment of Radiation Belt Modeling” Focus Group Agenda

GEM 2016 Summer Workshop

Session 1 (Tue, 01:30-03:30 PM, SFCC O'Keefe/Milagro/Kearny): “Radiation Belt (RB) particles and modeling”.

Chair: Weichao Tu and Steve Morley

1. **Hong Zhao:** On the relation between radiation belt electron fluxes and solar wind parameters/geomagnetic indices
2. **Xinlin Li:** Radiation belt electron intensity variations: Van Allen Probes era vs. previous two solar cycles
3. **Ashley Jones:** Secular drift of the SAA from SAMPEX particle counts
4. **Drew Turner:** The source of inner zone electrons by sudden injections
5. **Shri Kanekal:** Near-Instantaneous energization of radiation belt electrons by IP shocks, including the March 17 2015 event
6. **Dan Baker:** The March and June 2015 storms and their implications for radiation belt models
7. **Mary Hudson:** Simulations of the March 2013 and March 2015 Storms
8. **Vania Jordanova:** Modeling the seed population of the radiation belts with SHIELDS
9. **Adam Kellerman:** Recent development and performance of the data-assimilative VERB code
10. **Lutz Rastaetter:** CCMC results for challenge events
11. **Suk-bin Kang:** Modeling of dropout and drift loss to the magnetopause using CIMI model for GEM challenge event on June 1 2013
12. **Alexander Drozdov:** Response of radiation belt simulations to different radial diffusion coefficients (walk-in: additional slides to introduce the recently launched mission Lomonosov)
13. **Sasha Ukhorskiy** (walk-in)

Session 2 (Wed, 01:30-03:30 PM, SFCC O'Keefe/Milagro/Kearny): “Waves and local interactions”.

Chair: Wen Li and Jay Albert

1. **Louis Ozeke:** Quantifying the ULF wave radial diffusion coefficients using global ground based magnetometer measurements for each of the GEM challenge events
2. **Jean-Francois Ripoll:** Reproducing the observed energy-dependent structure of Earth's electron radiation belts during storm recovery with an event-specific diffusion model
3. **Irina Zhelavskaya:** Automated determination of electron density from electric field measurements on the Van Allen Probes spacecraft using neural networks
4. **Xiangning Chu:** Observation and neural network modeling of the refilling plasmasphere

5. **Dave Hartley:** Quantifying the variable sheath impedance of the Van Allen Probes EFW instrument using whistler-mode waves
6. **Wen Li:** New chorus wave properties near the equator from Van Allen Probes wave observations
7. **Homayon Aryan:** Average chorus scale size
8. **Jinxing Li:** Coherent Whistler Waves Simultaneously Observed in Unexpectedly Large Spatial Scale
9. **Jacob Bortnik:** The observed and simulated saturation characteristics of chorus waves
10. **Lunjin Chen:** Evaluation of electron pitch angle scattering rates based on observed EMIC waves
11. **Xiaojia Zhang:** The statistical distribution of EMIC wave spectra using Van Allen Probes observations
12. **Xiangrong Fu:** Modeling EMIC wave properties: linear theory and hybrid simulation
13. **Oleksiy Agapitov:** Nonlinear local parallel acceleration and precipitation of electrons through Landau trapping by oblique whistler-mode waves in the outer radiation belt

Session 3 (Fri, 01:30-03:30 PM, SFCC Sweeney B): “ULF waves and nonlocal transport” — joint session with “ULF Wave Modeling, Effects, and Applications” FG.

Chair: Jay Albert and Michael Hartinger

1. **Greg Cunningham:** Radial diffusion in non-dipolar background fields
2. **Theodore Sarris:** Quantifying outer belt electron radial diffusion based on Van Allen Probes data and test particle simulation
3. **Wen Li (walk-in):** The potential importance of pitch angle dependence in DLL
4. **Anthony Chan:** Evaluation of Drift-Shell-Splitting Effects using 3D Diffusion Modeling
5. **Qianli Ma:** Radial intrusion of energetic electrons in the slot region
6. **Solene Lejosne:** Modulations of the electric drift below $L \sim 3$ due to the ionosphere dynamo
7. **Yan Song:** The role of ULF waves in the particle acceleration
8. **Mike Hartinger:** Globally coherent ULF waves: azimuthal wave numbers and other properties

Session 4 (Fri, 04:00-06:00 PM, SFCC Sweeney B): “RB "dropout" and "buildup" challenges and future plans”.

Chair: Steve Morley and Wen Li

1. **Hui Zhu:** Long-term relativistic radiation belt simulation with VERB code: using various parameterizations
2. **Nikita Aseev:** Understanding the dynamics of electrons at GEO
3. **Yi-Jiun Su:** Formation of the inner electron radiation belt by enhanced large-scale electric fields during the March 2013 storm
4. **Qianli Ma:** Magnetosonic waves during the challenge events

5. **Weichao Tu:** Low-altitude electron distributions during the challenge events
6. **Jay Albert:** LCDS calculations for the challenge events
7. **Ashar Ali** (by Scot Elkington): DLL quantification using Van Allen Probes Data
8. **Steve Morley on behalf of FG:** Summary of challenge event resources