

## “Quantitative Assessment of Radiation Belt Modeling” Focus Group Agenda

### GEM 2015 Summer Workshop

**Session 1 (Mon, 01:30-03:00 PM):** “Radiation Belt (RB) observations and modeling results”. We solicit short presentations discussing the models for the acceleration, transport, and loss of radiation belt particles.

*Chairs: Weichao Tu and Steve Morley*

1. **Mary Hudson:** Recent simulation of the 'St Patrick's Day storm'
2. **Alexander Drozdov:** The VERB code modeling of the St. Patrick's day Storm
3. **Dan Baker:** Impenetrable Barrier during March 17 2015 storm
4. **Allison Jaynes:** Fast diffusion of ultra-relativistic electrons: 17 March 2015 storm event
5. **Thiago Brito:** Simulations on Radiation Belt Electron Precipitation Response to ULF Waves
6. **Drew Turner:** Storm-time analysis of RB
7. **Xinlin Li:** Deep Injections of 10s – 100s of keV electrons (RBSP observations)
8. **Jay Albert:** Modeling “peculiar” pitch angle distributions with MS waves

**Session 2 (Mon, 03:30-05:00 PM):** “Various magnetospheric wave characteristics and their global distribution required in RB modeling”. We solicit short presentations focusing on characterizing various wave properties that are required as inputs to RB models, including ULF waves, chorus and hiss, EMIC waves, magnetosonic waves, etc., and their effects on RB particles.

*Chairs: Wen Li and Jay Albert*

1. **Ashar Ali:** Radial Diffusion Coefficients Using E and B Field Data from the Van Allen Probes
2. **Seth Claudepierre:** Advertisement for the GEM ULF Wave Challenge
3. **Xinlin Li:** Relation between ULF and radial diffusion of RB electrons
4. **Lauren Blum:** The relationship between EMIC waves and radiation belt electron precipitation
5. **Wen Li:** Global distribution of chorus wave intensity using the statistical model and POES technique
6. **Jay Albert:** Nonlinear wave-particle interaction
7. **Qianli Ma:** Evaluation of electron scattering due to typical magnetosonic waves using analytical formula
8. **Lunjin Chen:** The effect of bounce resonance with magnetosonic waves on the radiation belt electrons
9. **Oleksiy Agapitov:** Storm-induced energization and losses of radiation belt electrons: Effects of wave obliquity

**Session 3 (Tue, 10:30-12:15 PM):** “Seed populations, plasma density, and magnetic field configuration required in RB modeling”. We solicit short presentations specifying other required inputs for driving RB simulations, which include seed particle populations, plasma density, magnetic field configuration, last closed drift shell, etc.

*Chairs: Jay Albert and Weichao Tu*

1. **Natalia Ganushkina:** Low energy electrons in the inner magnetosphere
2. **Mick Denton:** An empirical model of electron and ion fluxes derived from observations at geosynchronous orbit
3. **Alex Boyd:** Quantifying the Radiation Belt Seed Population During the Van Allen Probes Era
4. **Oleksiy Agapitov:** Time Domain Structures: generation mechanisms and effects for electrons
5. **Xiangrong Fu:** Double layers associated with electron/ion acoustic waves
6. **Zhao Li:** 3D test-particle simulation of the 17-18 March, 2013 CME-shock driven storm
7. **James McCollough:** DSX is still happening
8. **Alex Crew:** New results from FIREBIRD II
9. **Quintin Schiller:** A novel technique to apply electron lifetimes to radial diffusion models

**Session 4 (Tue, 01:30-03:00 PM):** “RB "dropout" and "buildup" challenges and Planning for future activities”. We have sent out a survey to the RB community regarding the selection of interesting RB “dropout” and “buildup” events and we will discuss the survey results. You are also welcome to propose potentially interesting events relevant to our “dropout” and “buildup” challenges. At last, we will wrap up and plan for future FG activities.

*Chairs: Steve Morley and Wen Li*

General short presentations (01:30-02:00 PM)

1. **Yuri Shprits:** Recent results of the reanalysis
2. **Shri Kanekal and Dan Baker:** Electron bursts during 17 March 2015 storm
3. **Brian Kress:** Observations and modeling of rebuilding during storms

“Dropout” and “Buildup” Challenges (02:00-03:00 PM)

4. **Drew Turner:** “Dropout” and “Buildup” challenge events
5. **QARBM FG leaders:** Discussion of “Dropout” and “Buildup” challenge events
6. Open discussions and plan for future FG activities

**Session 5 (Tue, 03:30-05:00 PM):** “Joint session with “Inner Magnetosphere Cross-Energy/Population Interactions” FG”. Since the two FGs have common interest in understanding how plasma waves are generated and how much they influence the radiation belt dynamics, we call for short presentations that address the coupled effects between important plasma waves in the inner magnetosphere and the changes in the energetic particle dynamics.

*Chairs: Jichun Zhang and Weichao Tu*

1. **Wen Li:** Quantitative simulation of radiation belt electron dynamics using 3D diffusion code
2. **Yuri Shprits:** Combined Convective and Diffusive Simulation: VERB-4D Results
3. **Xiangrong Fu:** Modeling EMIC wave generation from ring current ions
4. **Anthony Saikin:** The geomagnetic condition dependence of the spatial distributions of EMIC waves observed by the Van Allen Probes
5. **Jacob Bortnik:** Generation of chorus waves in a lab plasma
6. **Xin An:** Linear excitation of whistler waves
7. **Shuo Wu:** Hybrid Code Simulations of Whistler Waves in Compressed Dipole Field
8. **Chih-ping Wang:** Multi-point observation of ULF waves