

## **GEM FG: Quantitative Assessment of Radiation Belt Modeling Challenge Event Candidates**

Due to current availability of Qin-Denton files for empirical field models, no candidate events after March 2014 are listed.

### Storms, enhancements dominant:

1. **Oct 8-9, 2012:** CME-shock driven storm, double-dip in Dst; MeV electron responses: fast dropout followed by very strong enhancement. Observations: Reeves et al. (Science, 2013). Modeling: Thorne et al. (Nature, 2013); Hudson et al. (GRL, 2014); Kress et al. (GRL, 2014), Tu et al. (GRL, 2014).
2. **Mar 17-18, 2013:** CME-shock driven storm; MeV electron responses: fast dropout followed by very strong enhancement. Modeling: Boyd et al. (GRL, 2014); Xiao et al. (JGR, 2014), Foster et al. (GRL, 2014); Li, W. et al., (JGR, 2014).
3. **July 10, 2013:** Modest-storm (Dst ~ -79 nT) acceleration up to ~ 5.2 MeV. Initial PSD depleted from previous storm. Middle storm in series of three, all with different responses. No reports in literature.

### Non-storm, enhancements dominant:

1. **Jan 13-14, 2013:** minimum Dst of -30nT, not a classic storm profile in Dst; MeV electron responses: minimal prior depletion, strong enhancement. Observations: Schiller et al. (GRL, 2014)
2. **Feb 21-24, 2013:** minimum Dst of -35nT, Dst profile storm-like; MeV electron responses: minimal prior depletion, strong enhancement. Observations: Su et al. (GRL, 2014)

### Storms, dropout dominant:

1. **Feb 27, 2014:** Minimum Dst of -99 nT. MeV electron response: dropout event. No reports in literature.

### Non-storm, dropout dominant:

1. **Sep 24, 2013:** Minimum Dst of -24nT, not a classic storm profile in Dst. MeV electron responses: rapid depletion. No reports in literature.
2. **Feb 16, 2014:** Minimum Dst of -22 nT, not a classic storm profile in Dst. MeV electron responses: rapid depletion. No reports in literature.