

Summary of US M&S CALET Group Activities  
11-May-2015

1. Action Items from last CALET M&S Call:
  - a. Kenji Yoshida requested a list of CALET HPC runs performed at LSU. The LSU group set up an account on the HPC log website for Kenji Yoshida. This information was forwarded to Kenji who acknowledged the receipt.
2. Electron-Proton (e/p) Separation Studies:
  - a. JFK (GSFC) has been using the CALET HPC data set to performed e/p separation studies based on Epics. See ep-SeparationStudyStatus-May11\_15.pdf for details.
  - b. Aaron Worley continues development of MVA-based e/p separation studies and initial results were presented at 2015 APS April meeting. Aaron's initial results show a proton rejection of  $\sim 5 \times 10^3 - 10^4$  with electron energy 1 GeV - 1 TeV against proton energy 1 TeV - 10 TeV. Aaron is continuing the MVA development and will be presenting results at the next US M&S conference call scheduled for this week.
3. CALET gamma-ray studies:
  - a. Nick Cannady (LSU) continues his work that is to be presented in an ICRC2015 paper. Nick has constructed CALET exposure maps based upon years worth of CALET data using Fermi diffuse and point-source gamma-ray models. With initial selection criteria, Nick is getting  $\sim 90\%$  gamma-ray acceptance with only a few % electron contamination. Nick and Alex Moiseev (GSFC) have been discussing the specifics of using Fermi models in CALET analysis.
4. UltraHeavy Cosmic Ray Studies:
  - a. Brian Rauch (WashU) continues to model the heavy nuclei energy spectra that CALET will measure with its full acceptance geometry for the geomagnetic rigidities seen on the ISS orbit. Results will form the basis of an ICRC paper. Brian has also completed a large suite of UHE CR runs using using Cosmos7.645/Epics7.165 and CALET CAD model Rev21.
5. CALET on-orbit Calibration Studies:
  - a. Amir Javaid (LSU) presented the results of his study at the 2015 APS April meeting. Currently he is working on understanding differences between his analysis with the results of the Japanese calibration analysis.
6. CALET particle tracking development:
  - a. Amir Javaid (LSU) continues the development of a particle tracking algorithm for CALET based upon 'kriging'. The results will be presented in a ICRC2015 paper.