Air Force Research Laboratory

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What the AE9/AP9 Models Need from International Partners

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A Deceptively Short List

- Plasma data sets (.1-50 keV), especially with low background interior to GEO
- LEO data sets (all energies), especially with low background in the SAA/inner belt
- Templates – especially those that include the inner zone and/or atmosphere gradients
- Reanalyses (long time series of dynamic global radiation state) for sample solar cycle and/or for computing spatiotemporal correlations

How to Provide a Particle Data Set

- We need a time series of unidirectional differential flux with an error bar, with locations
  - Data cleaning
  - Intercalibration
  - Inversion from omni/integral flux
- We can work with you if you can do it yourself
- We can do some or all of this for you, if you can give us the data and help us understand your instrument
- We will handle integrating the flux data into the AE9/AP9 statistical maps and correlation tables

How to Provide a Template or Reanalysis

- Ideally a template or reanalysis would estimate flux on our model grid:
  - K, hmin for LEO energetic particles
  - K, Φ for high altitude energetic particles
  - L_m, α_{eq}
- Ideally the grid would use Olson Pftizer Quiet 1977 + IGRF as the field model
- We can usually work with other grids and coordinate systems or help you convert

Questions & Discussion