Analysis Work to Do Prior to DC2
brainstorm topics for discussion

1) Background Rejection

Distinguish between what is needed for generation ramp-up (start that early!) and what can be done in reprocessing.

- **Geometry validation**
- **Physics (re)confirmation:**
  - Multiple scattering for e, π, p (separate G4 code for each)
  - Delta-ray production – check μ behavior
  - e+ interaction at low energy (blanket photons)
- **Reconfirm onboard filter bits for "pruning"**
- **Infrastructure: event display, robust event subset peeling, production pipeline, dataset file system and web interface**
- **New tuple variables**
  - ACD: max(2 Tile corridor hit counts)
    Hit count in proximity to hit tiles (row-dependent on sides)
  - CAL: Cluster count (=> cluster definition. Inter-tower gaps issue)
    MIP track segment count (>3logs in a row consistent with mip-like trajectory in any orientation) + longest MIP track segment (in units of logs).
- **New analysis procedures** (may result in several new variables)
  - TKR: Refit of events using upward moving Hadron Hypothesis (dE/dX & Kalman energy and ability to switch hypotheses)
  - EVENT: Topology identification (upward/downward V)
    Presence of un-associated tracks.

Needed for DC2

- **PSF**
  - improvements using CAL info at high energy
  - improve treatment of TKR cluster positions vs. angle (non-zero thickness of SSDs)
  - rework vertexing algorithm (combining tracks, using event axis)
  - iterative recon: simplify and stream-line. **SCHEDULE?**

- **Energy resolution improvements**
  - low energy: selections
  - high energy: broaden phase space

- **IRFs and covariance matrix formulation of errors**