Plans for Simple Benchmarks

- Working meeting yesterday to discuss simple benchmark studies
  - Take work done earlier by Isidro Gonzalez as starting point
    - Thanks to Isidro for providing his code
  - Discussed several possible simple benchmark studies
    - Goal for next few weeks is to get started & address technicalities
- Start with the following benchmarks (both Fluka and Geant4):
  1. Consistency checks (Juerg)
     - Energy and momentum conservation
     - Charge and baryon number conservation
     - ϕ symmetry
  2. A few (p,xn) double differential reactions (Juerg)
     - Redo earlier studies with latest G4 and "ATLAS physics list"
  3. Pion absorption below 1 GeV (Juerg)
     - Experimental data available eg for Al, Cu, Fe, Bi, Au
  4. Rapidity plots on H / Ar / Xe at 200 GeV showing the proper build up of the Glauber cascade with target mass (Isidro)

Some Possible Further Tests

- A few examples of possible further simple benchmark studies that we started discussing yesterday
  - Extend nucleon induced neutron/proton production tests to a wider energy (and target) range
  - Pion production by nucleons (below a few GeV)
  - A few rapidity/Feynman-X distributions showing the model scaling properties above 5-10 GeV
  - Feynman-X and p_T distributions with p/π/K on H (maybe others) at 200 GeV from NA22
  - Correlation plot among fast/grey/black tracks showing the internal correlations of the models
- Did not yet discuss studies for electromagnetic sector
- Will decide how to proceed depending on outcome of "startup" studies