

PacDKChainGenerator Update

- PacDKEvtGen did not work with PacTauUserApp.
- PacTauUserApp uses GfiKk2f as its primary event generator, not EvtGen.
- GfiKk2f uses EvtGen as a GfiAbsCleaner.
- EvtGen “registers” Jetset for reading decay tables.
- PacDKEvtGen assumes Jetset is already “registered”.
- PmcSimulate creates a PacDKChainGenerator object in its beginJob method:
 - the PacDKChainGenerator constructor formerly instantiated a PacDKEvtGen object; this worked when EvtGen was the primary generator as the EvtGen object had already been created.
 - this failed when GfiKk2f was the primary generator as the EvtGen object had not yet been created.
- Because trying to instantiate a PacDKEvtGen object during the beginJob phase of the program created conflicts, the PacDKEvtGen object is now instantiated the first time PacDKChainGenerator::generateDecayChain(...) is executed.
- **This problem is resolved.**

Another PacDKxxxx Issue

- Dave Brown reports that π^0 's generated in material interactions do not decay into pairs of photons.
- The relevant code in PmcSimulate.cc looks like

```
while ( stdgtList.begin() != stdgtList.end() ){
  gtptr = stdgtList.front();
  /* simulate a GTrack and append the result to the total list*/
  simTrack=simulateATrack(gtptr);
  if (simTrack){
    _simTrkList->append(simTrack);
    _maps->gtrk2SimTrk()[gtptr] = simTrack;
  // generate material interaction daughters
    if(_matDaughters.value())generateInteractions(simTrack,stdgtList);
  // generate the decays and decay daughters
    if(_allowDecays.value())generateDecays(simTrack,stdgtList);
    /* move to the next element in the list */
  } // end of if (simTrack){ ...
  stdgtList.pop_front();
} // end of while ( stdgtList.begin() != ...
```

- I have checked that the code is looping over all elements of stdgtList, and hope to identify the problem soon.