Subject: elastic neutron scattering in Geant3
Posted by David Barton on Thu, 21 Jan 2010 17:17:22 GMT
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I'm trying to output the energy loss and interaction position for ~1 MeV neutrons elastically scattering in my detector. I'm using the GCALOR package to process the events and I'm getting somewhat strange results. I'm finding large reductions in the kinetic energy of the neutron (up to >90%) which seems impossible for elastic scattering in my material. It seems that I must be getting inelastic events mixed in, but the rate seems rather high and these event don't appear at all when I'm looking for events that have a total energy loss (DESTEP > 0). I'm monitoring IPART for my events and all of the events have a neutron coming out, but when I look at only events where DESTEP is > 0 I only get protons out. [Is there a parameter that looks at the total energy of your initial particle? DESTEP seems to be the total energy of the total interaction]

I'm really not sure if I'm doing something wrong, if there is a problem with the program or if the results are correct, but I figure it probably is something that I'm doing wrong. If anyone has any advice related to neutron elastic scattering that would be great.