# reactions on neutron target

1. – very hard. No charged particles from primary vertex. Limited resolution on vertex determination. Bad time-of-flight resolution for momentum determination. Final state neutron needs to be measured (efficiency issues, neutron energy determination issues in absence of good “start time”).
2. . Pretty straightforward in case of charged decay branches or , but very hard in case of neutral branches , (no primary vertex reconstruction, large flight path). Fairly simple in case of decays
3. same as - simple charged decay branches, tedious neutral. An interesting decay branch would have bad resolution in both and angles (no primary vertex, bad ToF…), do not know if kinematical fitting of decay vertex can sufficiently improve the situation.
   1. This reaction cannot be done on proton target. (Should not we expect isospin mixing and various isospin violating interference effects?)
4. Very hard in case of ground state due to absence of primary vertex. A lot better with excited states since charged decay particles can be utilized for the primary vertex determination without loss of accuracy in .
5. Great reaction. Fixed primary vertex, charged particles from secondary vertex. Probably the best reaction to demonstrate our discovery potential on neutron target and double-strangeness production on neutron target.