Subject: Re: the simulation of ep to e delta(1910)+, delta(1910)+ to Sigma(1385)^0 K+
Posted by Xinying Song on Tue, 03 May 2016 11:03:55 GMT
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Hi Ingo,

Thanks very much for your response.

Because Sigma13850->Lambda dilepton is also Dalitz decays which is very like Delta->N diLepton already defined in PDalitzDecay.cc, I add the Sigma13850 Dalitz decay in PDalitzDecay.cc,

as well I add this sentence accordingly in the simulation code:

PReaction *my_reaction = new PReaction("_P1 = 11.0","e-","p","e- Delta1910+ [Sigma13850 [dilepton [e+ e-] Lambda] K+]","YtosigmaK",0,0,0,0);

and the modified PDalitzDecay.cc/h and simulation code tmp_YtoLambdaee.C are shown in the attachment.

Here new problem arises,

the output when I finished running the tmp_YtoLambdaee.C and quit the root, the root bursts out some errors as follows,

root [0]
Processing tmp_YtoLambdaee.C...
Info in <PUtilsREngine::PUtilsREngine>: Random seed set to -1005353843
Warning in <PUtilsREngine::PUtilsREngine>: Seed set FIXED to 100
Info in <PStdData::PStdData()>: (CONSTRUCTOR)
Info in <PDataBase::PDataBase()>: (CONSTRUCTOR)
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 5440: Sigma13850 --> Lambda + dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 5472: Delta1910+ --> Sigma13850 + K+
Info in <PDynamicData::PDynamicData()>: (CONSTRUCTOR)
Info in <PStdModels::PStdModels()>: (CONSTRUCTOR), Standard model filler
Info in <PStdModels::GetModels>: Read std models
Info in <PDistributionManager::PDistributionManager>: Pion beam plugin available
Info in <PDistributionManager::PDistributionManager>: HADES classes available
Info in <PDistributionManager::PDistributionManager>: Plugin for Dalitz decay (generator & new D Dalitz) available
Info in <PDistributionManager::PDistributionManager>: Dalitz decays of N* activated
Info in <PDistributionManager::PDistributionManager>: Elementary plugin available
Info in <PDistributionManager::PDistributionManager>: Rare eta decays are enabled
Info in <PDistributionManager::PDistributionManager>: Baryonic resonances with strangeness available
Info in <PDistributionManager::PDistributionManager>: PDG/UNIGEN classes available

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Info in <PDistributionManager::PDistributionManager>: Beam line simulation classes available
PDistribution::Add: Could not get flag. First flag must be *not* private
Info in <PDistributionManager::PDistributionManager()>: (CONSTRUCTOR)
################################################################################
################### Cross-Section Genertation is occuring ######################
################################################################################
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 1248: N*(1520)+ -> p +
dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 1216: N*(1440)+ -> p +
dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 1280: N*(1535)+ -> p +
dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 2080: N*(1520)0 -> n +
dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 2048: N*(1440)0 -> n +
dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 2112: N*(1535)0 -> n +
dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 544: eta -> dilepton + dilepton
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 545: eta -> e+ + e- + pi+ + pi-
Warning in <PStaticData::AddParticle>: Name Sigma13850 already used in data base
<Beam>
  e- (0.000000,0.000000,11.000000;11.000000) wt = 1.000000, m = 0.000511 pid = 3
  Vertex = 0.000000 0.000000 0.000000
<Target>
  p (0.000000,0.000000,0.000000;0.938272) wt = 1.000000, m = 0.938272 pid = 14
  Vertex = 0.000000 0.000000 0.000000
Info in <PParticle::operator+>: (ALLOCATION) Keeping beam and target particle for further
reference
Info in <PParticle::operator+>: (ALLOCATION) The composite e- + p has been added
Info in <PStaticData::AddDecay>: (ALLOCATION) Decay index 14003: e- + p --> e- +
Delta1910+
Info in <PStdModels::GetModels>: Read std models
Info in <PDistributionManager::Attach>: Re-iteration of std plugin done

 Reaction of 9 Particles interacting via 4 Channels
   Reaction Particles:
     0. quasi-particle (e- beam and p target)
     1. e- (tracked particle 0)
     2. Delta1910+
     3. Sigma13850
     4. K+ (tracked particle 1)
     5. dilepton
     6. Lambda (tracked particle 2)
     7. e+ (tracked particle 3)
     8. e- (tracked particle 4)
   Reaction Channels:
     1. e- + p --> e- + Delta1910+
        Interaction model(s):
        [mymodel] My cross section
        [e- + p_fixed_e-_Delta1910+] Fixed product masses {/}
        [e- + p_genbod_e-_Delta1910+] Pluto build-in genbod {/genbod}
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```
    2. Delta1910+ --> Sigma13850 + K+
       Interaction model(s):
       [Delta1910+_m1_Sigma13850_K+] 1 unstable hadron (2-body ps) {/} Sigma13850
       [Delta1910+_genbod_Sigma13850_K+] Pluto build-in genbod {/genbod}
    3. Sigma13850 --> Lambda + dilepton
       Interaction model(s):
       [Sigma13850_genbod_Lambda_dilepton] Pluto build-in genbod {/genbod}
       [sigma13850dalitz_decay] Sigma13850 Dalitz decay {/}
    4. dilepton --> e+ + e-
       Interaction model(s):
       [dilepton_fixed_e-_e+] Fixed product masses {/}
       [dilepton_genbod_e-_e+] Pluto build-in genbod {/genbod}
  Output File(s):
    Root : 'YtosigmaK.root', tracked particles on file.
PReaction: calculating widths in PData...
Info in <PF2::MakeIntegral>: Generating array, this can take a while....
Info in <PF2::MakeIntegral>: ...20% done
Info in <PF2::MakeIntegral>: ...40% done
Info in <PF2::MakeIntegral>: ...60% done
Info in <PF2::MakeIntegral>: ...80% done
Info in <PF2::MakeIntegral>: ...done (62500 bins)
Info in <PBreitWigner::GetWidth>: Width 1st call for Sigma13850, mass range 1.200000 GeV
to 1.748700 GeV
Info in <PDalitzDecay::GetWidth>: Creating mesh in Sigma13850 --> Lambda + dilepton
(0.001021,1.114568)
Info in <PReaction::Loop()>: Preheating done
 20% done in 13.053716 sec
 40% done in 13.208443 sec
 60% done in 13.373328 sec
 80% done in 13.523650 sec
 100% done in 13.673550 sec
 Event loop finished after 13.673579 sec
 CPU time 12.680000 sec
root [1] .q
*** Error in `/private/root_v5/build/bin/root.exe': free(): invalid pointer: 0x0000000001b912d0 ***
======= Backtrace: =========
/lib64/libc.so.6(+0x7278f)[0x7fb4d1ec578f]
/lib64/libc.so.6(+0x77ffe)[0x7fb4d1ecaffe]
/lib64/libc.so.6(+0x78d06)[0x7fb4d1ecbd06]
/private/root_v5/build/lib/libCore.so(_ZN9TObjArrayD1Ev+0x32)[0x7fb4d2b758b2]
/private/root_v5/build/lib/libHist.so(_ZN8TFormulaD1Ev+0xb7)[0x7fb4cdee3227]
/home/ikp1/song/Pluto/pluto_v5.43/libPluto.so(_ZN13PDistributionD1Ev+0xbb)[0x7fb4c973feef
]
/home/ikp1/song/Pluto/pluto_v5.43/libPluto.so(_ZN13PChannelModelD1Ev+0x75)[0x7fb4c971f
885]
/home/ikp1/song/Pluto/pluto_v5.43/libPluto.so(_ZN12PDalitzDecayD1Ev+0x75)[0x7fb4c97323
09]
/home/ikp1/song/Pluto/pluto_v5.43/libPluto.so(_ZN12PDalitzDecayD0Ev+0x18)[0x7fb4c97323
5c]
/private/root_v5/build/lib/libCore.so(_ZN5TList6DeleteEPKc+0x235)[0x7fb4d2b6f9a5]
/private/root_v5/build/lib/libCore.so(_ZN5TROOT20EndOfProcessCleanupsEb+0x45)[0x7fb4d
2b49f85]
```

/private/root_v5/build/lib/libCore.so(_ZN11TUnixSystem4ExitEib+0x20)[0x7fb4d2bc0960]
/private/root_v5/build/lib/libCore.so(_ZN12TApplication11ProcessLineEPKcbPi+0x7f)[0x7fb4d2b278df]
/private/root_v5/build/lib/libRint.so(_ZN5TRint15HandleTermInputEv+0x21b)[0x7fb4d2739d0b]
/private/root_v5/build/lib/libCore.so(_ZN11TUnixSystem16CheckDescriptorsEv+0x155)[0x7fb4d2bc53e5]
/private/root_v5/build/lib/libCore.so(_ZN11TUnixSystem16DispatchOneEventEb+0xcc)[0x7fb4d2bc5f0c]
/private/root_v5/build/lib/libCore.so(_ZN7TSystem9InnerLoopEv+0x16)[0x7fb4d2b17396]
/private/root_v5/build/lib/libCore.so(_ZN7TSystem3RunEv+0x70)[0x7fb4d2b17f40]
/private/root_v5/build/lib/libCore.so(_ZN12TApplication3RunEb+0x1f)[0x7fb4d2b2631f]
/private/root_v5/build/lib/libRint.so(_ZN5TRint3RunEb+0x517)[0x7fb4d273aea7]
/private/root_v5/build/bin/root.exe(main+0x4c)[0x40114c]
/lib64/libc.so.6(__libc_start_main+0xf5)[0x7fb4d1e74b05]
/private/root_v5/build/bin/root.exe[0x4011bd]
======= Memory map: ========
00400000-00402000 r-xp 00000000 08:04 10884409
/private/root_v5/build/bin/root.exe
00601000-00602000 r--p 00001000 08:04 10884409
/private/root_v5/build/bin/root.exe
00602000-00603000 rw-p 00002000 08:04 10884409
/private/root_v5/build/bin/root.exe
00c32000-035be000 rw-p 00000000 00:00 0

... ...

Does it means that the memory used in this simulation process exceeds the limit? if so, how to solve it?

## File Attachments

1) PDalitzDistribution.cc, downloaded 542 times
2) PDalitzDistribution.h, downloaded 540 times
3) tmp_YtoLambdaee.C, downloaded 576 times