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 644 times
2) PDalitzDistribution.h, downloaded 640 times
3) tmp_YtoLambdaee.C, downloaded 667 times