
Subject: Re: MC Truth propagation with FairLinks in timebased sim
Posted by [Marcel Tiemens](#) on Fri, 26 Feb 2016 12:53:37 GMT

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I tried tracing the problem, but I still don't understand what's causing it. As far as I can see, this is where it goes wrong:

PndEmcFWEndcapTimebasedWaveforms puts EmcWaveforms somewhere using FairWriteoutBuffer, but for some reason the next step, PndEmcFWEndcapDigi, has zero entries in its input waveform array.

Hits are converted to waveforms using

(Init)

```
...
// Create and activate output Buffer....choose between PndEmcWaveform and
PndEmcMultiWaveform
#ifdef MULTI
    fWaveformBuffer = new PndEmcWaveformBuffer("EmcWaveform", "PndEmcWaveform",
"Emc", fStoreWaves);
#else
    fWaveformBuffer = new PndEmcWaveformBuffer("EmcWaveform",
"PndEmcMultiWaveform", "Emc", fStoreWaves);
#endif

    fWaveformBuffer = (PndEmcWaveformBuffer*) ioman
->RegisterWriteoutBuffer("EmcTimebasedWaveform", fWaveformBuffer);
...etc
```

(Exec)

```
...
// construct corresponding waveform data Object
PndEmcWaveformData wfData(theHit->GetDetectorID(), wfSimulator);

//register hit...timebased framework uses ns, whereas emc deals with seconds as time unit
FairLink linkToHit(-1, ioman->GetEntryNr(), "EmcHit", iHit, 1.0);
wfData.AddHit(linkToHit, ioman->GetEventTime() + theHit->GetTime()*1.0e9,
theHit->GetEnergy());

fWaveformBuffer->FillNewData(&wfData);
...etc
```

, and it looks like the buffer is written out only at the end. The next task tries to make digis out of them using

(Init)

```
...
// Get input array
fWaveformArray = (TClonesArray*) ioman->GetObject("EmcMultiWaveform");
if (!fWaveformArray) {
    //check if EmcWaveform contains MultiWaveforms
    fWaveformArray = (TClonesArray*) ioman->GetObject("EmcWaveform");
    if(!fWaveformArray) ||
(!fWaveformArray->GetClass()->InheritsFrom("PndEmcMultiWaveform"))){
```

```

cout << "-W- PndEmcFWEndcapDigi::Init: "
<< "No PndEmcWaveform array containing multi waveforms!" << endl;
return kERROR;
}

}
// Create and register output array
fDigiArray = ioman->Register("EmcDigi","PndEmcDigi", "Emc", fStoreDigis);
...etc

```

, but then fWaveformArray->GetEntriesFast() yields zero in the Exec part.

Also, the macros in /macro/run/ return a segmentation violation from PndFileNameCreator:

```

=====
#5 0x00007f74fe344850 in std::basic_ostream<char, std::char_traits<char> >&
std::operator<< <char, std::char_traits<char>, std::allocator<char> >(std::basic_ostream<char,
std::char_traits<char> >&, std::basic_string<char, std::char_traits<char>, std::allocator<char> >
const&) () from /usr/lib/x86_64-linux-gnu/libstdc++.so.6
#6 0x00007f74ec5c6ce3 in PndFileNameCreator::GetPath (this=0x7ffeea9a6c70) at
/home/marcel/jan16/pandaroot/PndTools/generalTools/PndFileNameCreator.cx x:188
#7 0x00007f74ec5c70a0 in PndFileNameCreator::TruncateFileName (this=0x7ffeea9a6c70,
cut=false) at /home/marcel/jan16/pandaroot/PndTools/generalTools/PndFileNameCreator.cx
x:212
#8 0x00007f74ec5c6910 in PndFileNameCreator::GetCustomFileName (this=0x7ffeea9a6c70,
ext="par", addon="", cut=false) at
/home/marcel/jan16/pandaroot/PndTools/generalTools/PndFileNameCreator.cx x:147
#9 0x00007f74ec5c6121 in PndFileNameCreator::GetParFileName (this=0x7ffeea9a6c70,
addon="", cut=false) at
/home/marcel/jan16/pandaroot/PndTools/generalTools/PndFileNameCreator.cx x:28
#10 0x00007f74e4c30d53 in PndMasterRunSim::Setup (this=0x26529b0) at
/home/marcel/jan16/pandaroot/PndTools/master/PndMasterRunSim.cxx:64
=====

```