
Subject: Re: Loss of efficiency for electrons at $\theta \sim 22^\circ$, due to association failure in EMC

Posted by [Ermias](#) on Fri, 20 Feb 2015 23:04:30 GMT

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Hi Stefano,

Sorry, I made the wrong assumption about who's working on that part of the code. I didn't mean to offend anyone and I should have known better to check...

For tracks that fail to get associated (`emcIndex < 0` after the loop over `emcHits`), I printed out the track MC index, its energy calculated from tracking using pion hypothesis together with the module number and energy of the `emcHit` with the closest energy to the track.

I only printed out a few hundred events, but it seems like module 3 is contributing to all of the unintended misses in the events I checked. Please let me know if I can provide any other useful feedback...

ps: Do you advise against using `oct.14` for any simulation that uses the EMC?

Cheers,
Ermias.

```
pidCandMcIndex= 0 : trackEnergy= 0.849534 Module= 3 emcHitEnergy= 0.740053
pidCandMcIndex= 0 : trackEnergy= 4.03095 Module= 3 emcHitEnergy= 3.51169
pidCandMcIndex= 0 : trackEnergy= 4.97663 Module= 3 emcHitEnergy= 4.8357
pidCandMcIndex= 0 : trackEnergy= 3.74218 Module= 3 emcHitEnergy= 3.74057
pidCandMcIndex= 0 : trackEnergy= 2.5047 Module= 3 emcHitEnergy= 2.40757
pidCandMcIndex= 0 : trackEnergy= 0.405984 Module= 3 emcHitEnergy= 0.347898
pidCandMcIndex= 0 : trackEnergy= 1.16359 Module= 3 emcHitEnergy= 1.08486
pidCandMcIndex= 0 : trackEnergy= 2.81498 Module= 3 emcHitEnergy= 2.69472
pidCandMcIndex= 1084 : trackEnergy= 0.22849 Module= 3 emcHitEnergy= 0.36478
pidCandMcIndex= 1083 : trackEnergy= 0.428764 Module= 3 emcHitEnergy= 0.36478
pidCandMcIndex= 0 : trackEnergy= 2.87692 Module= 3 emcHitEnergy= 2.68255
pidCandMcIndex= 0 : trackEnergy= 1.8808 Module= 3 emcHitEnergy= 1.69046
pidCandMcIndex= 0 : trackEnergy= 1.2923 Module= 3 emcHitEnergy= 1.2199
pidCandMcIndex= 0 : trackEnergy= 3.45425 Module= 3 emcHitEnergy= 3.62943
pidCandMcIndex= 0 : trackEnergy= 4.53307 Module= 3 emcHitEnergy= 3.92069
pidCandMcIndex= 0 : trackEnergy= 3.95271 Module= 3 emcHitEnergy= 3.83431
pidCandMcIndex= 0 : trackEnergy= 2.07854 Module= 3 emcHitEnergy= 3.70188
pidCandMcIndex= 0 : trackEnergy= 0.840579 Module= 3 emcHitEnergy= 0.816676
pidCandMcIndex= 0 : trackEnergy= 3.44526 Module= 3 emcHitEnergy= 3.43316
pidCandMcIndex= 0 : trackEnergy= 4.48627 Module= 3 emcHitEnergy= 4.15238
pidCandMcIndex= 0 : trackEnergy= 3.05255 Module= 3 emcHitEnergy= 3.01602
pidCandMcIndex= 0 : trackEnergy= 1.46736 Module= 3 emcHitEnergy= 0.845704
pidCandMcIndex= 0 : trackEnergy= 1.70518 Module= 3 emcHitEnergy= 1.62284
pidCandMcIndex= 0 : trackEnergy= 1.37598 Module= 3 emcHitEnergy= 1.33291
pidCandMcIndex= 0 : trackEnergy= 2.54198 Module= 3 emcHitEnergy= 3.89186
pidCandMcIndex= 0 : trackEnergy= 4.27216 Module= 3 emcHitEnergy= 4.15942
pidCandMcIndex= 0 : trackEnergy= 1.54658 Module= 3 emcHitEnergy= 1.48835
```

pidCandMcIndex= 0	:	trackEnergy= 3.80585	Module= 3	emcHitEnergy= 3.40713
pidCandMcIndex= 0	:	trackEnergy= 3.73259	Module= 3	emcHitEnergy= 3.56458
pidCandMcIndex= 0	:	trackEnergy= 0.898616	Module= 3	emcHitEnergy= 0.949504
pidCandMcIndex= 0	:	trackEnergy= 1.25923	Module= 3	emcHitEnergy= 0.920801
pidCandMcIndex= 0	:	trackEnergy= 0.463938	Module= 3	emcHitEnergy= 0.0957954
pidCandMcIndex= 0	:	trackEnergy= 2.92428	Module= 3	emcHitEnergy= 3.71379
pidCandMcIndex= 0	:	trackEnergy= 0.611837	Module= 3	emcHitEnergy= 0.546316
pidCandMcIndex= 0	:	trackEnergy= 4.05194	Module= 3	emcHitEnergy= 4.24035
pidCandMcIndex= 0	:	trackEnergy= 0.40836	Module= 3	emcHitEnergy= 0.320374
pidCandMcIndex= 349	:	trackEnergy= 0.262772	Module= 3	emcHitEnergy= 0.130423
pidCandMcIndex= 0	:	trackEnergy= 4.78844	Module= 3	emcHitEnergy= 4.82905
pidCandMcIndex= 0	:	trackEnergy= 0.384974	Module= 3	emcHitEnergy= 0.215389
pidCandMcIndex= 0	:	trackEnergy= 1.66274	Module= 3	emcHitEnergy= 1.65131
pidCandMcIndex= 1	:	trackEnergy= 0.212189	Module= 3	emcHitEnergy= 0.0214177
