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Subject: Bug in PndPidEmcBayesAssociatorTask?  
Posted by [Andreas Pitka](#) on Fri, 03 Feb 2012 13:15:13 GMT  
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Hi,

there seems to be some problem in the PndPidEmcBayesAssociatorTask, seems like calculating the log of a not defined variable or log of zero.

```
=====
#10 0xb69f06c8 in log10 () from /lib/libm.so.6
#11 0xb66bcb3d in TMath::Log10(double) ()
    from /data_dirac/apitka/fairsoft/jan12/tools/root/lib/libMathCore.so
#12 0xb0a5310a in PndPidEmcBayesAssociatorTask::GetPdf (this=0x8b58f30,
    ppin=6.62114954, thin=65.4592667, phin=-31.6744957, z20in=0.995157063,
    z53in=0.0010235901, LATin=0, EPin=0.0368693545, charge=1, proba=0xbfc95868)
    at /data_dirac/apitka/Pandaroot/Trunk/trunk/pid/PidClassifier/PndPidEmcBaye
sAssociatorTask.cxx:209
#13 0xb0a52dc1 in PndPidEmcBayesAssociatorTask::DoPidMatch (this=0x8b58f30,
    pidcand=0x1083ad38, prob=0x1083b528)
    at /data_dirac/apitka/Pandaroot/Trunk/trunk/pid/PidClassifier/PndPidEmcBaye
sAssociatorTask.cxx:151
#14 0xb0a52c17 in PndPidEmcBayesAssociatorTask::Exec (this=0x8b58f30,
    option=0xb37fd4d0 "")
    at /data_dirac/apitka/Pandaroot/Trunk/trunk/pid/PidClassifier/PndPidEmcBaye
sAssociatorTask.cxx:124
#15 0xb72c01a8 in TTask::ExecuteTasks(char const*) ()
    from /data_dirac/apitka/fairsoft/jan12/tools/root/lib/libCore.so.5.32
#16 0xb72bf65e in TTask::ExecuteTask(char const*) ()
    from /data_dirac/apitka/fairsoft/jan12/tools/root/lib/libCore.so.5.32
#17 0xb372449b in FairRunAna::Run (this=0x8085df8, Ev_start=0, Ev_end=100)
    at /data_dirac/apitka/Pandaroot/Trunk/trunk/base/FairRunAna.cxx:382
=====
```

Best Regards

Andreas

ps i am using the macros from macro/pid and revision 14319

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Subject: Re: Bug in PndPidEmcBayesAssociatorTask?  
Posted by [Ronald Kunne](#) on Fri, 03 Feb 2012 15:52:08 GMT  
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The problem seems to be that the Lateral Moment = 0, for the EMC cluster, which is strange.

Andreas Pitka wrote on Fri, 03 February 2012 14:15 LATin=0

I can't change the code, but you can cure it by changing lines 205-209 of trunk/pid/PidClassifier/PndPidEmcBayesAssociatorTask.cxx :

```
// trafo that spreads out the parameters
pp = rangePconst0 + rangePconst1 * TMath::Log10(ppin);
Z20 = -TMath::Log10(1-z20in);
Z53 = -TMath::Log10(z53in);
LAT = -TMath::Log10(LATin);
```

into

```
// trafo that spreads out the parameters
if (ppin<0.000001) ppin=0.000001;
if(z20in>0.999999) z20in=0.999999;
if(z53in<0.000001) z53in=0.000001;
if(LATin<0.000001) LATin=0.000001;

pp = rangePconst0 + rangePconst1 * TMath::Log10(ppin);
Z20 = -TMath::Log10(1-z20in);
Z53 = -TMath::Log10(z53in);
LAT = -TMath::Log10(LATin);
```

This checks for zeroes in all four logarithms.

Friendly greetings,  
Ronald Kunne

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Subject: Re: Bug in PndPidEmcBayesAssociatorTask?  
Posted by [Stefano Spataro](#) on Sat, 04 Feb 2012 11:59:59 GMT  
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The code has been updated in svn.  
Please check and let us now.

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Subject: Re: Bug in PndPidEmcBayesAssociatorTask?  
Posted by [Andreas Pitka](#) on Mon, 06 Feb 2012 11:09:59 GMT  
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Thanks a lot for the help.

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