Subject: [FIXED] RhoCandidate - probability connection ?
Posted by Ronald Kunne on Fri, 23 Aug 2013 13:05:14 GMT
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Hi there !

Is there a way to go from the RhoCandidates in a RhoCandList to the corresponding PndPidProbability, to have access to the probability information stored there ?

Typically I want to do something like:

```
RhoCandList eplus;

while (theAnalysis->GetEvent() && i++<nevts)  {

  theAnalysis->FillList(eplus,"ElectronAllPlus");

  for (j=0;j<eplus.GetLength();j++) {
     Int_t pointer = eplus[j]->Pointer();    // hypothetical connection
     PndPidProbability *prob = (PndPidProbability*)emc_array->At(pointer);
     Float_t proba  = prob->GetElectronPidProb();
  }

}
```

Thanks in advance,
Ronald Kunne

Subject: Re: RhoCandidate - probability connection ?
Posted by StefanoSpataro on Fri, 23 Aug 2013 13:14:06 GMT
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The candidate should have the following data members:

```
  virtual Float_t         GetElectronPidLH() const=0;
  virtual Float_t         GetMuonPidLH() const=0;
  virtual Float_t         GetPionPidLH() const=0;
  virtual Float_t         GetKaonPidLH() const=0;
  virtual Float_t         GetProtonPidLH() const=0;
```

In theory they should be filled by the FillList. I don't know if this works.

Subject: Re: RhoCandidate - probability connection ?
Posted by Klaus Götzen on Fri, 23 Aug 2013 14:07:19 GMT
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Hi Ronald,

after the PID values have been stored in the RhoCandidate by the PndAnaPidCombiner (or PndAnalysis::FillList, which does this internally), you should be able to access the Pid Probs by

```
RhoCandList list;
...
list[i]->GetPidInfo(0); // Electron Prob
list[i]->GetPidInfo(1); // Muon Prob
list[i]->GetPidInfo(2); // Pion Prob
list[i]->GetPidInfo(3); // Kaon Prob
list[i]->GetPidInfo(4); // Proton Prob
```

Best,
Klaus

Subject: Re: RhoCandidate - probability connection ?
Posted by Ronald Kunne on Fri, 23 Aug 2013 14:42:19 GMT
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Quoting Klaus:

```
RhoCandList list;
...
list[i]->GetPidInfo(0); // Electron Prob
list[i]->GetPidInfo(1); // Muon Prob
list[i]->GetPidInfo(2); // Pion Prob
list[i]->GetPidInfo(3); // Kaon Prob
list[i]->GetPidInfo(4); // Proton Prob
```

Thank you. But.... I had actually found these and discarded them before I asked the question, as it gives back exact 0's and 1's.

With the code

```
 for (j=0;j<eplus.GetLength();j++) {
   cout << "probs:" ;
     for (k=0;k<5;k++) {
         cout << " " <<  eplus[j]->GetPidInfo(k);
     }
     cout << endl;
 }
```

the results is
probs: 0 0 1 0 0 for pi+pi- events
probs: 1 0 0 0 0 for e+e- events

Subject: Re: RhoCandidate - probability connection ?
Posted by StefanoSpataro on Fri, 23 Aug 2013 14:44:01 GMT
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Using EmcBayes?

Subject: Re: RhoCandidate - probability connection ?
Posted by Ronald Kunne on Fri, 23 Aug 2013 15:02:23 GMT
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Stefano Spataro wrote on Fri, 23 August 2013 16:44Using EmcBayes?

Right. That's the solution.
Now I understand 2.2.3 in the Rho tutorial !

Thanks for helping me out on that one.

Subject: Re: RhoCandidate - probability connection ?
Posted by StefanoSpataro on Fri, 23 Aug 2013 15:08:51 GMT
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I supposed you were using the ideal association, and there you have only probability 0 or 1.

Subject: Re: RhoCandidate - probability connection ?
Posted by Ronald Kunne on Fri, 23 Aug 2013 15:12:32 GMT
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Stefano Spataro wrote on Fri, 23 August 2013 17:08I supposed you were using the ideal association, and there you have only probability 0 or 1.

You suppose correct