

Hi,

I think I found the problem.

First, the covariance matrix was not filled for neutrals, as you were saying. Second, in the EMC class the error in Energy was set but not the error in momentum. then all the elements with p were set to zero.

I fixed in my private version of the code, and I can see something reasonable. I wait for the Klaus' OK before committing the code.

Meanwhile, if you wanna try, these are the changes:

Index: ../fsim/PndFsmEmcBarrel.cxx

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--- ../fsim/PndFsmEmcBarrel.cxx (revisione 24552)

+++ ../fsim/PndFsmEmcBarrel.cxx (copia locale)

@@ -107,12 +107,14 @@

if (wasDetected && fabs(t->charge())<1e-8)

```
{
    result->setdE(dE(t));
+   result->setdp(dE(t));
    result->setdphi(dphi(t));
    result->setdtheta(dtheta(t));
}
```

```
else
{
```

```
    result->setdE(0.);
+   result->setdp(0.);
    result->setdphi(0.);
    result->setdtheta(0.);
}
```

Index: ../fsim/PndFastSim.cxx

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--- ../fsim/PndFastSim.cxx (revisione 24552)

+++ ../fsim/PndFastSim.cxx (copia locale)

@@ -465,7 +465,7 @@

RhoCandidate tcand(ft->p4(),ft->charge(),svtx);

- if( (fPropagate||fUseFlatCovMatrix) && fabs(ft->charge())>1e-6)

+ if( (fPropagate||fUseFlatCovMatrix)// && fabs(ft->charge())>1e-6)

```
{
    tcand.SetCov7(ft->Cov7());
    pidCand->SetCov7( ft->Cov7() );
```

Index: ../fsim/PndFsmEmcBwCap.cxx

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--- ../fsim/PndFsmEmcBwCap.cxx (revisione 24552)

+++ ../fsim/PndFsmEmcBwCap.cxx (copia locale)

@@ -99,12 +99,14 @@

if (wasDetected && fabs(t->charge())<1e-8)

```

{
    result->setdE(dE(t));
+   result->setdp(dE(t));
    result->setdphi(dphi(t));
    result->setdtheta(dtheta(t));
}
else
{
    result->setdE(0.);
+   result->setdp(0.);
    result->setdphi(0.);
    result->setdtheta(0.);
}

```

Index: ../../fsim/PndFsmEmcFwCap.cxx

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--- ../../fsim/PndFsmEmcFwCap.cxx (revisione 24552)

+++ ../../fsim/PndFsmEmcFwCap.cxx (copia locale)

@@ -100,12 +100,14 @@

if (wasDetected && fabs(t->charge())<1e-8)

```

{
    result->setdE(dE(t));
+   result->setdp(dE(t));
    result->setdphi(dphi(t));
    result->setdtheta(dtheta(t));
}

```

else

```

{
    result->setdE(0.);
+   result->setdp(0.);
    result->setdphi(0.);
    result->setdtheta(0.);
}

```

Index: ../../fsim/PndFsmEmcFS.cxx

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--- ../../fsim/PndFsmEmcFS.cxx (revisione 24552)

+++ ../../fsim/PndFsmEmcFS.cxx (copia locale)

@@ -100,12 +100,14 @@

if (wasDetected && fabs(t->charge())<1e-8)

```

{
    result->setdE(dE(t));
+   result->setdp(dE(t));
    result->setdphi(dphi(t));
    result->setdtheta(dtheta(t));
}

```

else

```

{
    result->setdE(0.);
+   result->setdp(0.);
    result->setdphi(0.);
    result->setdtheta(0.);
}

```