Subject: LSLTrackrep covariances are zero Posted by asanchez on Wed, 13 May 2009 09:03:22 GMT View Forum Message <> Reply to Message

Dear Christian, i was for a while not not working with the tracking. Today i have seen that there is some problems during the fitting if one uses the LSLtrack representation as it is now. The main point is that when the Kalman is calling the routine ProcessHit at line 219 (Kalman.cxx) the covariance elements returned by rep->extrapolate(pl,state,cov); are zero. Then the kalman is trowing the following error message if(cov[0][0]<1.E-50){ FitterException exc(COVEXC,\_\_LINE\_\_,\_\_FILE\_\_); 228 229 throw exc: 230 } I wonder this actual situation because it was working fine.

I wonder this actual situation because it was working fine. I was investigating by myself and i realized that

at LSLTrackrep.cxx the cov elements are not filled anymore. (Ofcourse if one uses the geanetrackrep than the covariance matrix are filled by geane.)

than the covariance matrix are filled by geane.)

So i did the following check, i have modified the routine extrapolate(const DetPlane& pl,

TMatrixT<double>& statePred, TMatrixT<double>& covPred) of LSLtrackrep.cxx as follows (by adding red marked text and commenting out the blue text):

extrapolate(const DetPlane& pl, TMatrixT<double>& statePred, TMatrixT<double>& covPred)

## {

TMatrixT<double> jacobian;

//std::cout << "Extr from To: " << s << " " << sExtrapolateTo << std::endl; double l=extrapolate(pl,statePred); // covPred=JCovJ^T with J being Jacobian

jacobian.ResizeTo(5,5); Jacobian(pl,statePred,jacobian);

TMatrixT<double> dummy(cov,TMatrixT<double>::kMultTranspose,jacobian); covPred=jacobian\*dummy;

```
covPred=cov;
return I;
}
```

And after this modifications it works again fine.

best regrads

ALicia S.

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