

Hi again,

I put here an example how to transform your geometric objects between their local frame and the laboratory system.

```
void MvdIdealRecoTask::smearLocal(TVector3& pos, const MvdPoint* mvdpoint)
{
    /// smear a 3d vector in the local sensor plane

    gGeoManager->cd(mvdpoint->GetDetName());
    TGeoHMatrix* transMat = gGeoManager->GetCurrentMatrix();

    Double_t posLab[3], posSens[3];

    posLab[0]=pos.x(); posLab[1]=pos.y(); posLab[2]=pos.z();
    transMat->MasterToLocal(posLab,posSens);
    pos.SetXYZ(posSens[0],posSens[1],posSens[2]);

    smear(pos); // apply a gaussian

    posSens[0]=pos.x(); posSens[1]=pos.y(); posSens[2]=pos.z();
    transMat->LocalToMaster(posSens,posLab);
    pos.SetXYZ(posLab[0],posLab[1],posLab[2]);

    return;
}
```

If I'm not mistaken, you have your sensors (the geo objects we speak of) defined in a *.geo file. One entry is a box:

```
BOX
silicon
22.5 -15 -22.5
22.5 15 -22.5
-22.5 15 -22.5
-22.5 -15 -22.5
22.5 -15 22.5
22.5 15 22.5
-22.5 15 22.5
-22.5 -15 22.5
15 22.5 -755
1. 0. 0. 0. 1. 0. 0. 0. 1.
```

If I read this correctly it has a dimension of (x,y,z)=(45,30,45). This is in the local (sensor)

frame.

This is translated by (15,22.5,-755) and not rotated into the lab frame. These two last lines will be in the TGeoHMatrix of your object.

I hope this helps.

Byebye, Ralf.
