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Subject: Re: Radiation length units

Posted by [Artem Basalae](#) on Sun, 27 May 2012 08:22:56 GMT

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Hello! So much time passed and nobody answered here, I already found a solution myself.

In case somebody else has such a problem:

Values of radiation length are in cm and they may be very high, because length of step is variable, that is, distance between points where radiation length is calculated is also variable. This distance is a length of homogeneous volume which particle passes along its track.

One may need not the radiation length itself, but the effective radiation length which is defined as length divided by radiation length. It's easy to get these values, since FairRadLenPoint has coordinates where the particle enters volume and where the particle leaves it.

Thus, assuming you have your FairRadLenPoint as RadLenP:

```
TVector3 PosIn=RadLenP->GetPosition();
TVector3 PosOut=RadLenP->GetPositionOut();
TVector3 InOut=PosOut-PosIn;
Double_t Distance=InOut.Mag();
Double_t RadLen=RadLenP->GetRadLength();
Double_t RadLenEffective=Distance/RadLen;
```

There is a detailed example:

materialana.C

And an example of simulation:

materialsim.C

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