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Offline Secondary Vertex finding

Complete:

Goal of the page

The task of Vertex Finding is, given a set of tracks, to identify possible vertices and assign the tracks to the eventual vertices. In addition, a fit of the found vertices is often performed.

The VertexReconstructor

The task of the VertexReconstructor is to control all the steps of the reconstruction from the input of the initial tracks to the output of the list of vertices. Depending on the implementation of the concrete VertexReconstructor the different objects which perform the different steps are either hard-coded or have to be given at construction time. Most reconstructors will use internally a VertexFitter.

Offline vertex finding can not be done globally (with the exception of the search for the primary vertices), and so have to be called by the user in his own analyser or producer, with a collection of tracks that he has selected. So its basic usage is very simple, through the method *vertices*. As with most high-level algorithms, TransientTracks have to be used:

```
vector< TransientVertex > vertices (const vector<TransientTrack > &)
```

An easy way to use the different vertex reconstruction methods is via ConfigurableVertexReconstructor.

Vertex reconstruction algorithms

Several finders are now available:

- AdaptiveVertexReconstructor
- TrimmedKalmanVertexFinder
- TertiaryTracksVertexFinder
- MultiVertexFit : This algorithm is still experimental and not yet reliable

Review status

Reviewer/Editor and Date (copy from screen)	Comments
Main.speer - 03 Apr 2007	page author
ThomasSpeer - 27 Feb 2009	review and update

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