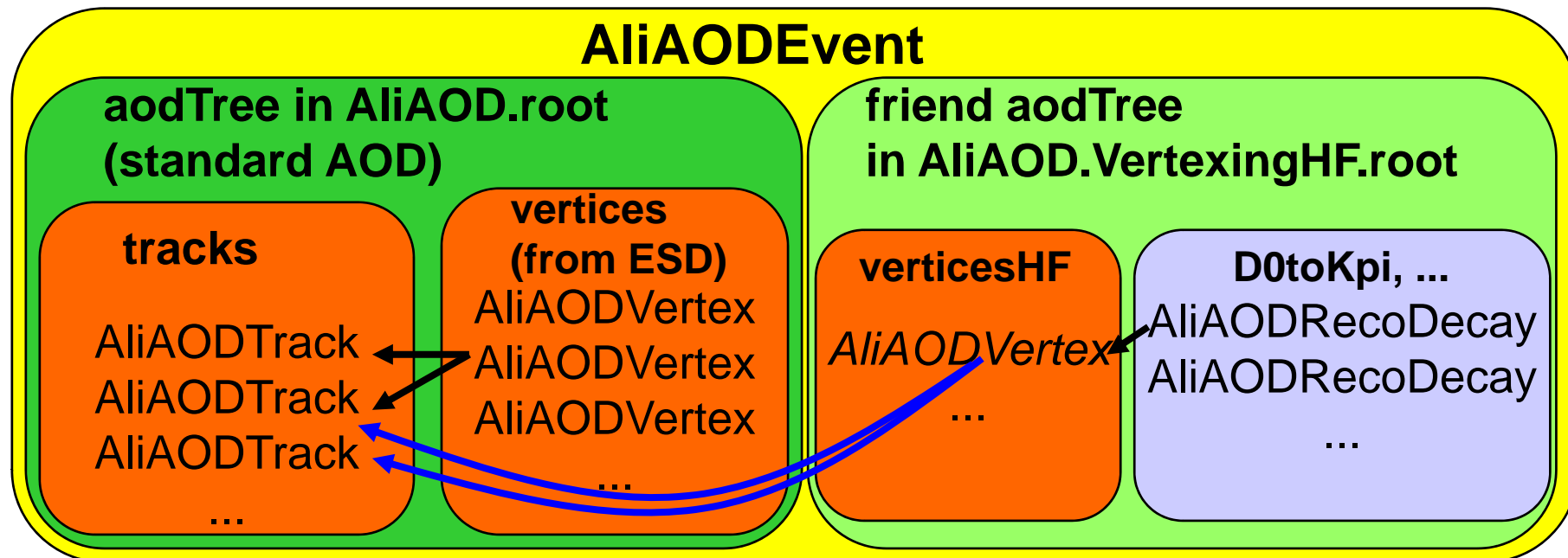


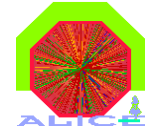
# Visualisation of HF vertices

- HF vertices ( $D^0 \rightarrow K\pi$ ,  $J/\psi \rightarrow ee$ ,  $D \rightarrow 3\text{prong}$ ,  $D \rightarrow 4\text{prong}$ ) are not in ESD but only in AOD
- They are object deriving from AliAODRecoParam



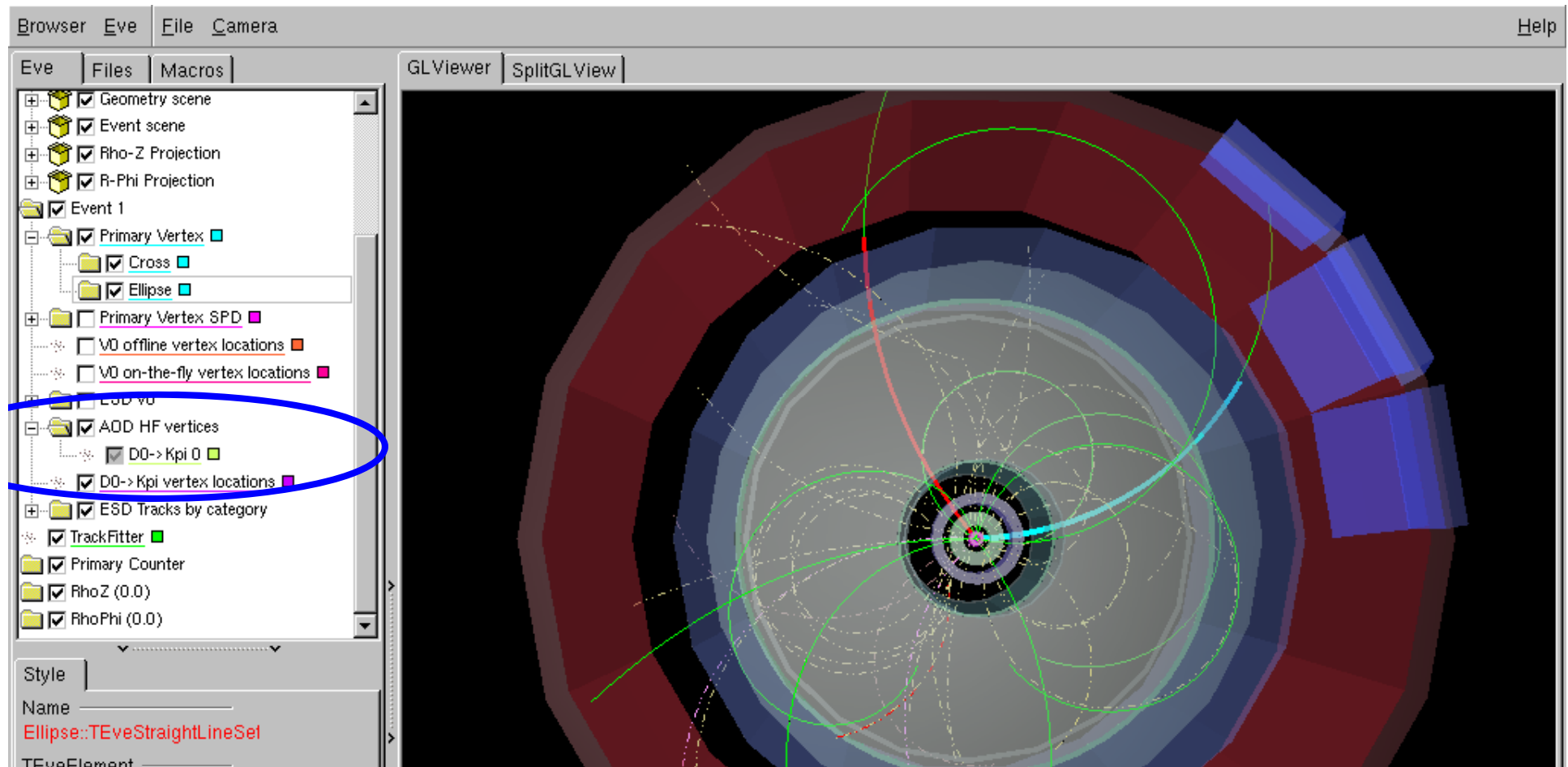


# Visualisation of HF vertices



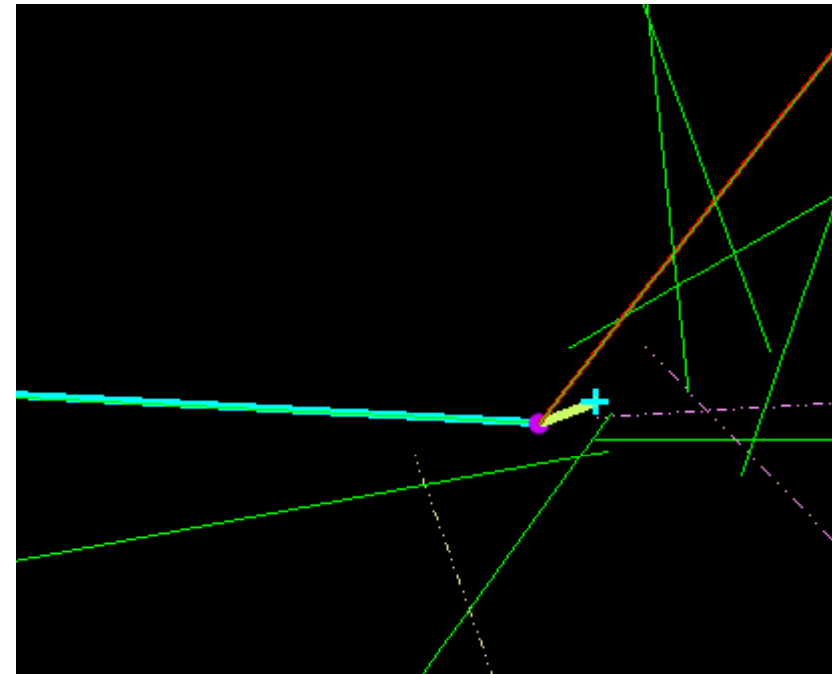
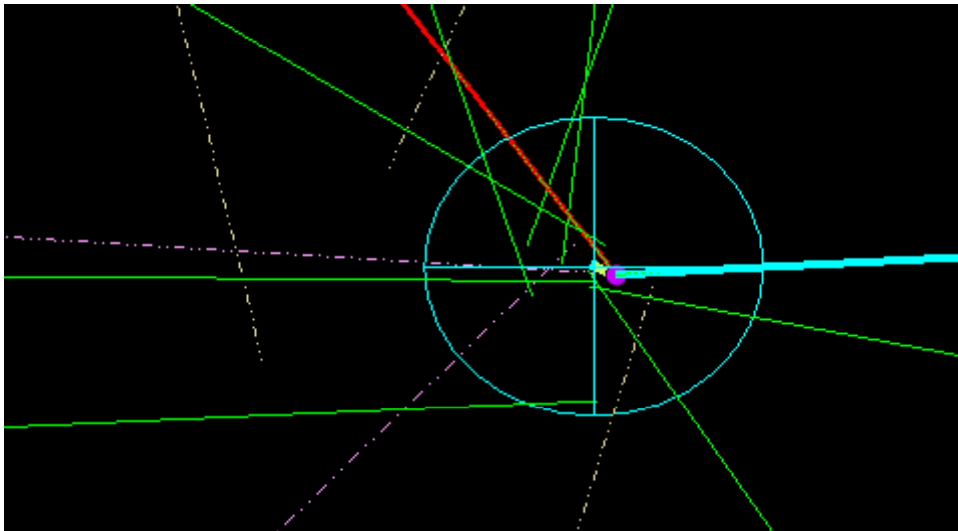
- ◆ Matevz added possibility to access to the AOD
  - ⊕ AliEveEventManager::AddAODFriend("AliAOD.VertexingHF.root")
  - ⊕ alieve\_init.C
  - ⊕ AliAODEvent \*aod = AliEveEventManager::AssertAOD()
- ◆ For the moment, visualise ESD event + HF from AOD
  - ⊕ need "parallel" ESD and AOD files
    - will not work with real data
- ◆ "Develop" full AOD visualisation (will be needed at some point)
  - ⊕ or move to AliVEvent, AliVVertex, AliVTrack ? but not all ESD info available

- Exercise: visualize  $D^0 \rightarrow K\pi$ , using interfaces for ESD V0s (thanks to Boris)



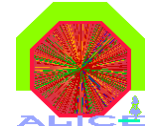
# Visualisation of HF vertices

- ◆ Exercise: visualize  $D^0 \rightarrow K\pi$ , using interfaces for ESD V0s (thanks to Boris)





## *To do*



- ◆ Develop specific visualization interfaces
  - ✦ generalisation of AliEveV0 (and TEveRecV0?) to  $n$  prongs
- ◆ Possibility to apply cuts (can already be done for V0s)
- ◆ Visualize vertices cov matrix as a rotated ellipsoid (axes not parallel to xyz)

# *Vertex fitting in alieve*

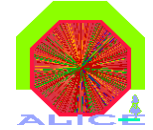
- ◆ Proposal: use AliVertexerTracks (used in AliRoot for primary vertex and heavy-flavour vertices reconstruction)
- ◆ How it is done in a macro:

## *Fit a vertex from n tracks*

```
AliVertexerTrack vt(esd->GetMagneticField());
TObjArray *array = new TObjArray(n);
for(Int_t i=0;i<n;i++) {
    AliESDtrack *t = esd->GetTrack(idx[i]);
    array->AddAt(t,i);
}
AliESDVertex *v = vt->VertexForSelectedESDTracks(array);
v->PrintStatus();
.... Drawn by alieve
```



# Vertex fitting in *alieve*



- ◆ How it is done in a macro:

## ***Remove a set of tracks from a vertex (or Add)***

```
AliVertexerTracks vt(esd->GetMagneticField());
TObjArray rmArray(n);
UShort_t *rmId = new UShort_t[n];
for(Int_t i=0; i<n; i++) {
    AliESDtrack *t = esd->GetTrack(idx[i]);
    rmArray.AddLast(t);
    rmId[i] = (UShort_t)t->GetID();
}
Float_t diamondxy[2] = {esd->GetDiamondX(), esd->GetDiamondY()};
AliESDVertex *v =
    vt->RemoveTracksFromVertex(esd->GetPrimaryVertexTracks(),
                              &rmArray, rmId, diamondxy);
v->PrintStatus();
.... Drawn by alieve
```