

# Fix for one category of blown VtxDAFit's

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12 April 2007

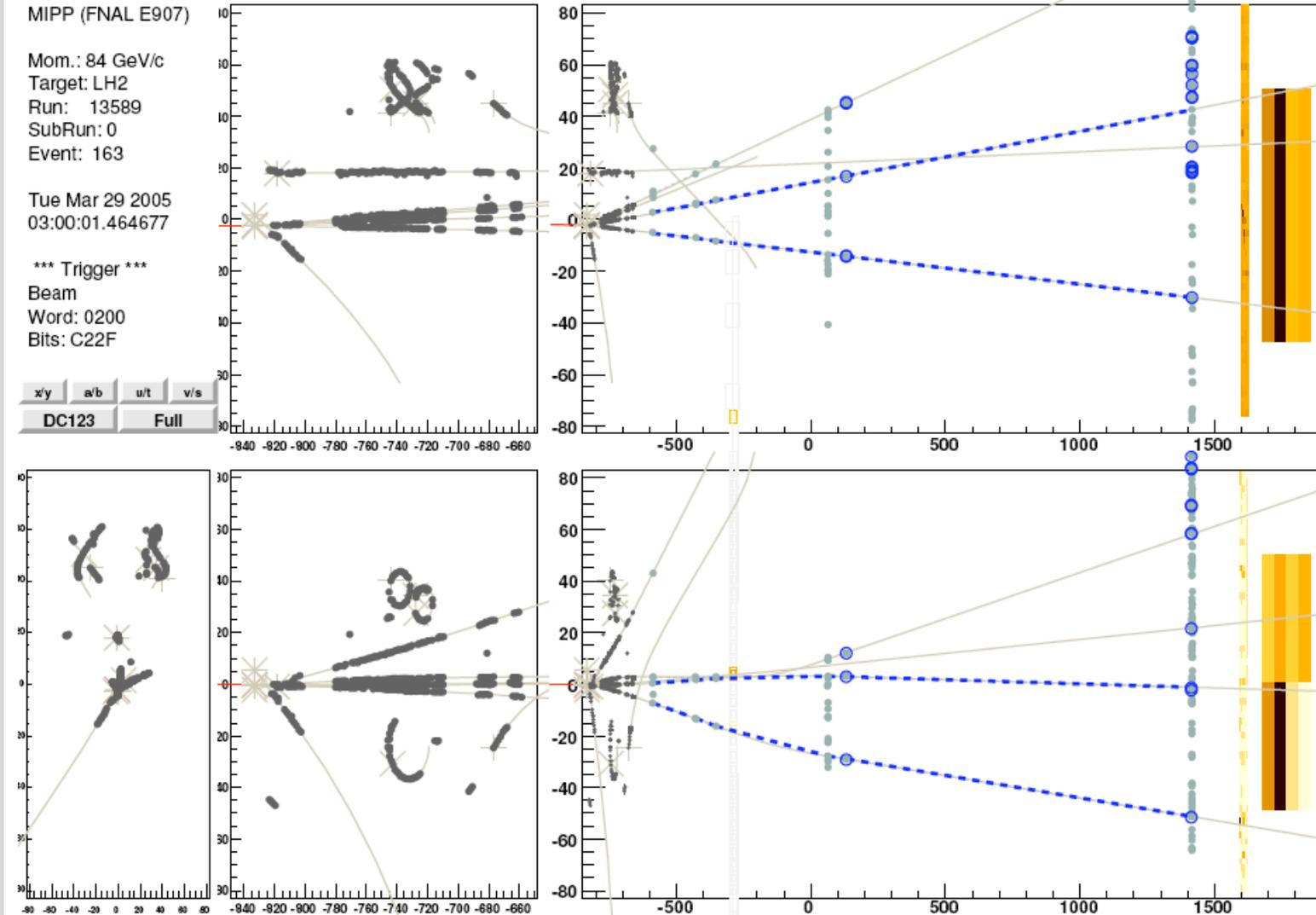
MIPP (FNAL E907)

Mom.: 84 GeV/c  
Target: LH2  
Run: 13589  
SubRun: 0  
Event: 163

Tue Mar 29 2005  
03:00:01.464677

\*\*\* Trigger \*\*\*  
Beam  
Word: 0200  
Bits: C22F

x/y	a/b	u/t	v/s
DC123		Full	



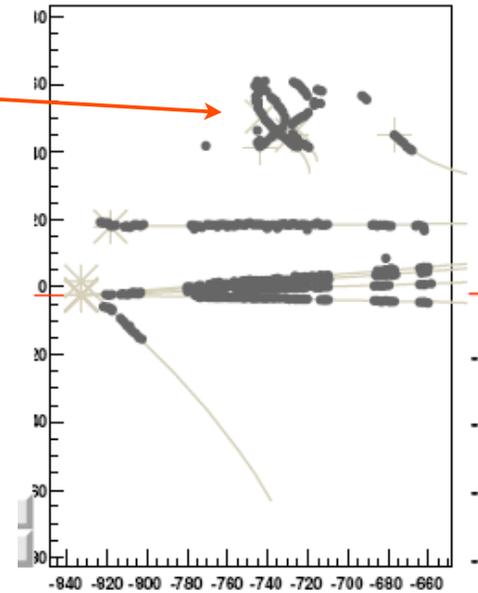
Example of failed event

Turgun reported this event last week. Why isn't there a vertex formed?

# Reason for failure

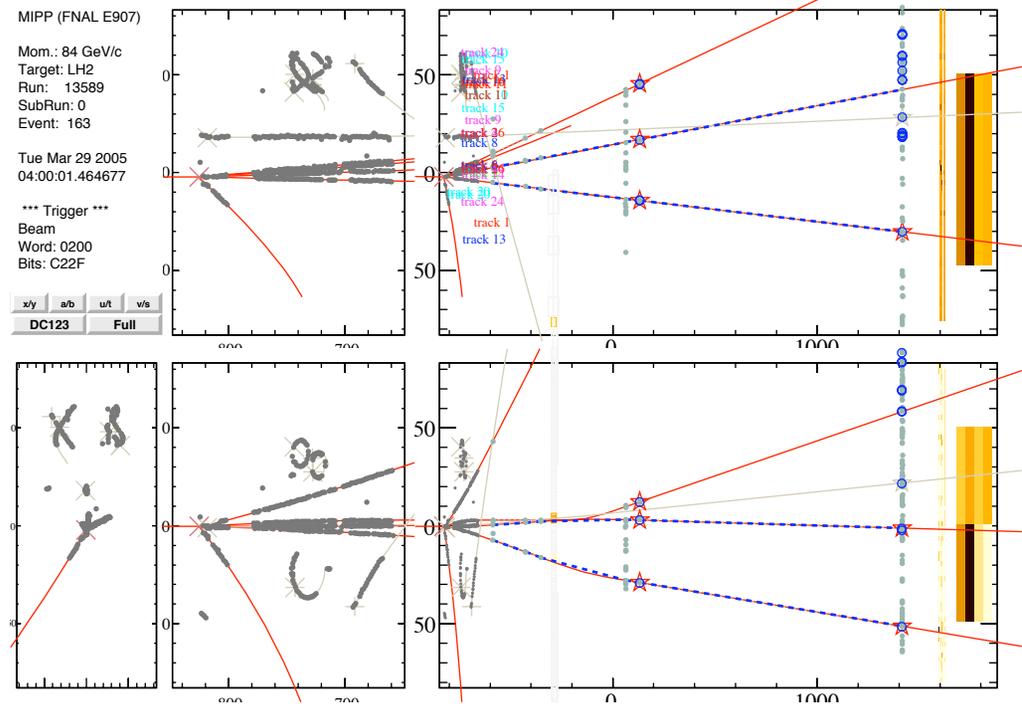
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- These spiraling electrons in the top of the volume are reconstructed as several tracks
- VtxDAFit initially weights all tracks the same, so this area shows up as a region of high track density, and hence a region to search for a vertex.
- VtxDAFit fails to find a vertex there and the algorithm stops searching, under the assumption that any subsequent vertices will be of lower quality



# The fix

- The fix I implemented for this is to boost the weight of beam tracks by a factor of 100
- This forces the algorithm to work with vertices near beam tracks first
- The factor of 100 is arbitrary, but is equivalent to assuming that we know the beam track positions x10 better than secondary tracks. That assumption is not too far from wrong.



Same event after the fix