

Background Level Study of Multi-Track Emulsion Vertices

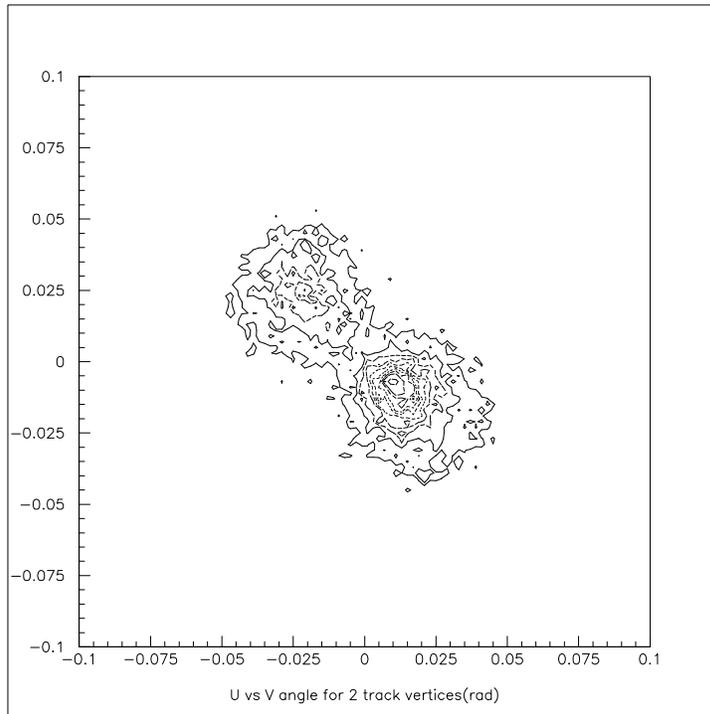
- Looked at 94 ECV files

	2 Track Vertices	3 Track Vertices	4 Track Vertices	5 Track Vertices	6 Track Vertices
Number of Observed Vertices	51585	1235	50	16	5
Number of Expected Vertices	51585	1235	29.6	0.71	0.017

- I used the ratio of 3 to 2 track vertices (2.4%) to calculate all subsequent expected vertex numbers (*i.e.* for 4,5, and 6 track vertices)

• In the following table I remove any track from a vertex (**3 or 4 track vertices only**) that is located in the “eyes” region of background tracks (see figure on page 2.). No event by event Byron correction is done on this sample (yet). If a track is in one of the “eyes” I degrade the vertex by how many tracks are in the “eyes”. Example: a 4 track vertex has two(one) tracks in the “eye” it gets counted as a 2(3) track vertex.

	2 Track Vertices	3 Track Vertices	4 Track Vertices	5 Track Vertices	6 Track Vertices
Number of Observed Vertices	N/A	529	21	N/A	N/A



- Now the resulting number of 4 track vertices is consistent with a background free sample.
- The number of 2 and 3 track vertices(background) are still very high.
- As an example I present a single event (3345-11919) that contained a large number of 2 track vertices
- From the plots on page 3, two plates in this event seem to have an alignment problem (plates 26 and 32). The plots also show the allowed z position of reconstructed vertices for these two plates – I eliminate one or the other or both from the z location plots.
- The allowed z region is 3.2 mm in the region of the plate – corresponds to 3 emulsion plates and 2 iron plates.
- I think we can be a little more stringent on allowed z region of vertex for the 2 and 3 track vertices and cut it down by a factor of 2 at most.

