



Contribution ID: 70

Type: poster

## Tracking of long lived hyperons in silicon detector at CDF.

*Thursday 30 September 2004 10:00 (1 minute)*

Long lived charged hyperon,  $\Xi$  and  $\Omega$ , are capable of travelling significant distances producing hits in the silicon detector, before decaying into  $\Lambda^0\pi$  and  $\Lambda^0K$  pairs, respectively. This gives unique opportunity of reconstructiong hyperon tracks. We have developed a dedicated “outside-in” tracking algorithm that is seeded by 4-momentum and decay vertex of the long lived hyperon reconstructed by its decay products. The tracking of hyperons in the silicon detector results in a dramatic reduction of the combinatorial background and an improvement of the momentum resolution compared with the standard reconstruction using final decay products.

Using a super clean sample of  $\Xi$  hyperons CDF observed charmed-strange baryon isodublet  $\Xi_c^0$  and  $\Xi_c^+$  for the first time in  $p\bar{p}$  collision.  $\Xi$  hyperons were used for the search for exotic  $S = -2$  baryons decaying into  $\Xi\pi$ .

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**Session Classification:** Poster Session 3

**Track Classification:** Track 2 - Event processing