

CCDPUL_05 for the “J’s”

List of tasks:

- Detailed study of ccdpul cut, as devised by Bipul for the '97 data, but using the new fitter and ntuples:
- prepare normalization and background samples for acceptance/rejection
- setup cuts should eliminate double-beam backgrounds, and other setup cuts perhaps similar to those created by Ilecktra for PV studies
- what 'pathology' cuts should be applied? TGCUTS in Bipul's thesis (section 3.4.6). I suggest we use these cuts for ccdpul (omitting ccdpul component)
 - WARNING!!: some pions already exist in k fibers, some of which are there via pulse fit mechanism in swathccd 'afterburner'... These will have slightly biased energy! these will bias A/R, but should we do anything about them?
- what do we do with target pv issues? correlates with ccdpulse rejection at some level.

- km21, kp21, kp22, piscat monitor samples might be very useful for acceptance.
- also prompt events (delco<2 ?)

- pnn1or2 with inverted PV in pnn2 region: rejection studies
- what level of PV cuts is reasonable?

- Problem-- small delco events (tk-tpi<3) are reconstructed by tgrecon, not swathccd.

- can we learn something from kink events sample?

- what's wrong with run ~48000? good_run list?
- Should we ignore ek_tg> ~60 MeV?

- acceptance/rejection for each of the cuts:
 what definition of 'successful fit' should be used?
 singlprob>0.25 => no doublepulse fit done
 singlprob<0.25 => yes doublepulse fit done

Bipul allowed 2nd pulse ntuple quantities to be used if:

- a) $\text{prob}(\text{single}) < 0.001$ and $\text{prob}(\text{double}) > 0.001$;
- b) $\text{doublampp} < 0$
- c) $\text{nonzbins} > 2$

- event rejected if:
 any kaon with $\text{ek_tg}(i) > 3$ must have successful single or double pulse fit in
 either/both hg and lg. (i.e. if BOTH single and double probs were < 0.001 ,
 [for both lg and hg??] reject event).
- examine this.
- why do we lose acceptance for otherwise good events?

- TN K045 recommended $\text{prob}(\text{single}) < \text{prob}(\text{double}) / 10$ and suggested other cuts as well.

- go through acc/rej samples, plotting distributions for 2nd pulse prob; $t_2 - t_1$ vs $t_{pi} - t_k$; e_1 ; e_2 ; $d_{\text{from_vertex}}$. suggest doing separately for lg and hg for now.