

Reprocessing for pnn2 ntuples

Reprocessing of “OLD SKIM1-4” on disk not feasible due to TGRECON-based selection of OLD SKIM1-3.

New scheme to reprocess data from DLT:

- Stage DLT to disk
- Process staged data with SWATHCCD and write out ntuples and skimmed data to disk for SKIMS 1,2,3 only (“NEW SKIM1-3”)
- Process staged data with SWATHCCD/TGRECON and write out ntuples and skimmed data to disk for SKIMS 4 only (“NEW SKIM4”)

NEW SKIM4 will only be used to study/tune PV. Since we are processing from DLT, we can skim 3/3 sample for SKIM4.

Possible problems:

1. total size of new skims on disk
2. NEW SKIM4 events in signal box and/or in background sample

Size of new skims on disk

All data from Benji.

	Events	Fraction	Skim factor	Skimmed evts to disk
Input	61598			
OLD SKIM1-4	23273	0.378	1/3	7758
NEW SKIM1-3	20253	0.329	1/3	6751
NEW SKIM4	2185	0.035	3/3	2185
NEW SKIM1-4	22438	0.364		8936

If we go with 3/3 option, increase in disk size is $8936/7758 = 1.15$.

With 1/3 option, decrease in disk size is $22438/23273 = 0.96$.

NEW SKIM1-4 is smaller than OLD SKIM1-4 because **NEW SKIM1-3** no longer contains TGRECON-processed events.

NEW SKIM1-3 and **NEW SKIM4** have 728 events in common.

Contents of NEW SKIM4	SKIM4		SKIM4·Setup	
	Events	Fraction	Events	Fraction
ALL	2185	1.000	164	1.000
SWATH failed	393	0.180	55	0.335
K π gap	544	0.250	47	0.305
K timing	95	0.043	11	0.067
B4/K vtx incons.	308	0.141	3	0.018
other SWATH passed	845	0.387	48	0.293
in NEW SKIM1-3	728	0.333	66	0.402

“Setup” is PSKINK·DELCO3. $164/2185 = 7.5 \pm 0.6\%$

Entries in table are based sequential classification; that is, event can't be “K timing” if it is “K π gap”.

27 of **48** events are in **NEW SKIM1-3**.

PAWPHOTO scan of 20 of **48** events: 7 good, 2 IC kink, 11 crap

NEW SKIM4 represents a potential increase in kink sample of $\sim 10\%$ if these events are not in **NEW SKIM1-3** or fail some selection cut.

NEW SKIM4 events in signal box or bkgd sample?

Problem: “kink” event in **NEW SKIM4** is signal candidate in **NEW SKIM1-3**. This can occur because kinematics are calculated by TGRECON in **NEW SKIM4** and by SWATHCCD in **NEW SKIM1-3**.

Solution: “kink” events must fail at least one cut based on SWATHCCD-calculated quantities.

Problem: “kink” event in **NEW SKIM4** survives to the end of PV rejection branch and also survives in **NEW SKIM1-3** CCDPUL-reversed sample. (Described by Joe as event in “training” sample that enters into “test” sample)

Solution: If solution above is not satisfactory, we can explicitly exclude events by run/event number.

Reprocessing

Are there potential problems not handled by current scheme?

Do we need more quantitative information on **NEW SKIM1-3** and **NEW SKIM4**?

We cannot begin reprocessing until “0 target TDC hit” problem found by Jim and under investigation by Jim, Renée, *et al* is understood and a solution is found.

We cannot begin reprocessing until Monday 14 Nov 2005 because Benji is on vacation.