Investigate number of extra tracks for $\gamma p \rightarrow \eta \pi^- \Delta^{++}$, $\eta \rightarrow \gamma\gamma$

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Motivation

- Recent discussions on how many extra tracks are needed to be kept
- Pros: smaller analysis trees saves disk space and processing time
- Cons: May lose some information
- Procedure: run ReactionFilter with 5 different flags:
    1. B4_M17 ("standard")
    2. B4_M17_S0_T0 (no extra showers or tracks)
    3. B4_M17_S1_T0 (1 extra shower, no extra tracks)
    4. B4_M17_S0_T1 (no extra showers, 1 extra track)
    5. B4_M17_S1_T1 (1extra shower, 1 extra track)
- Try to get a handle on how much information we lose by cutting on tracks

Distributions after Reaction Filter and cuts (unused E<100 MeV)
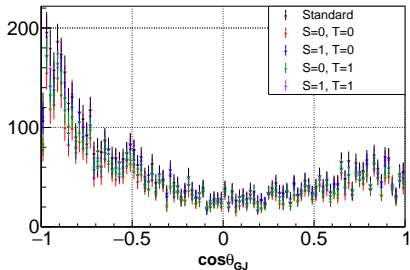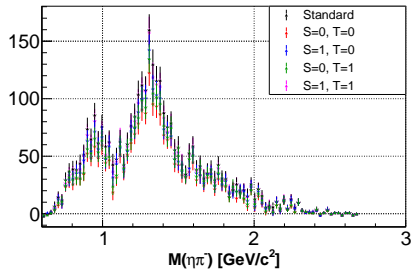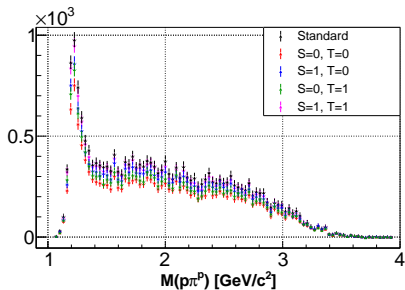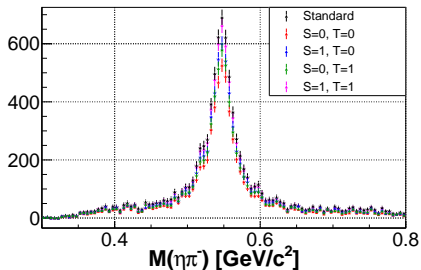
Distributions

Reaction	Size (GB)	%	DSelector Time (4 threads)	N $\eta\pi$	%
Standard	16	100	42m	33561	100
S=0,T=0	0.6	3.5	2m	24051	72
S=1,T=0	2.0	12.5	6m	28314	84.4
S=0,T=1	0.8	4.7	2m	26947	80.3
S=1,T=1	2.7	16.9	7m	31694	94.5

- Save 83% of disk space yet only lose 5% of $\eta\pi$ events with keeping only 1 extra shower and track
  - For keeping analysis trees locally (eg IU cluster, own space on farm), this option could be ideal
  - Does not create a bias in mass and angular distributions
  - 2018-01 trees go from ~5TB too ~1TB (for S=1, T=1)
  - Would go to ~196 GB for S=0, T=0 (my be good option for first looks)