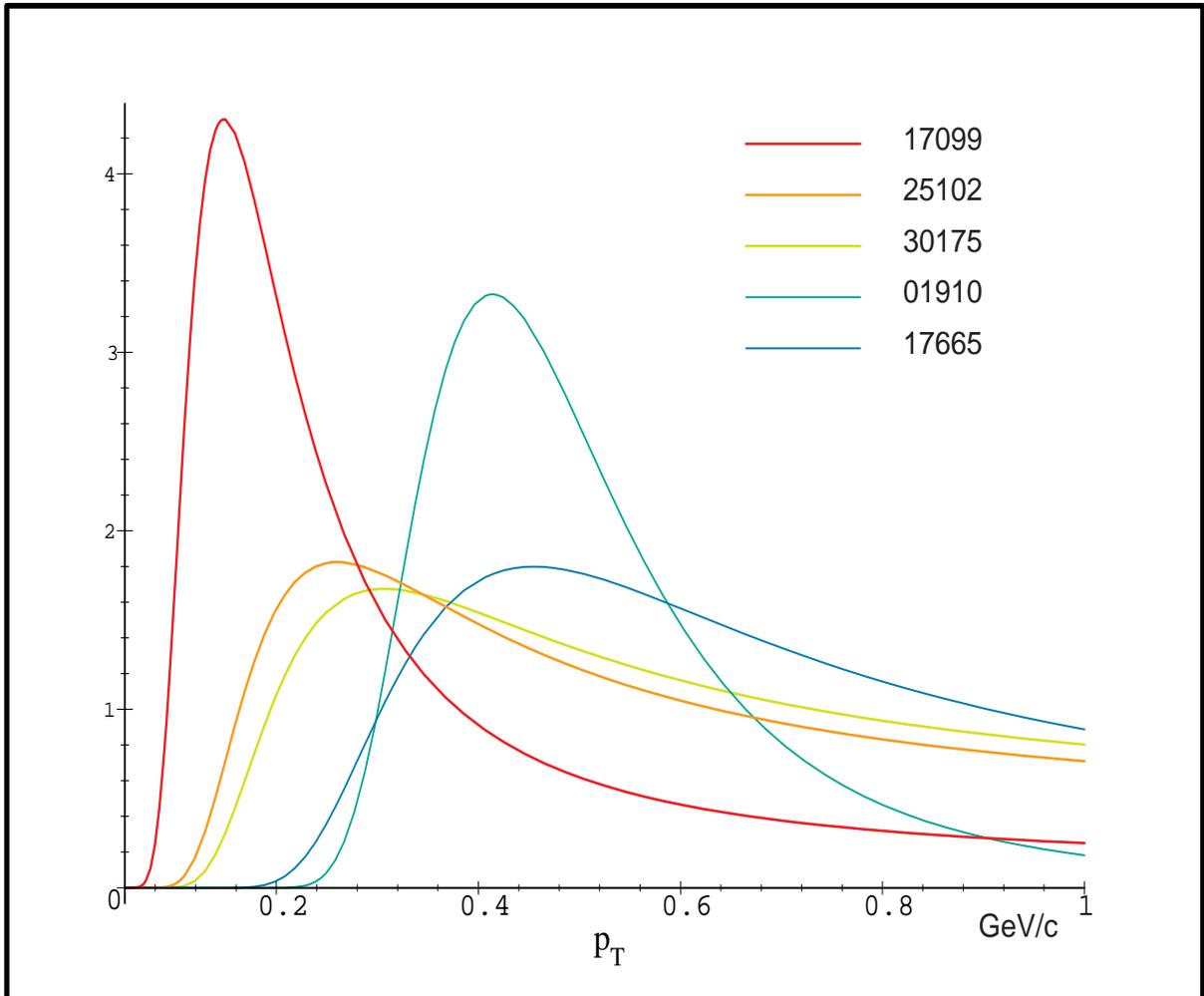


Computing Signal to Background for Tau kink events

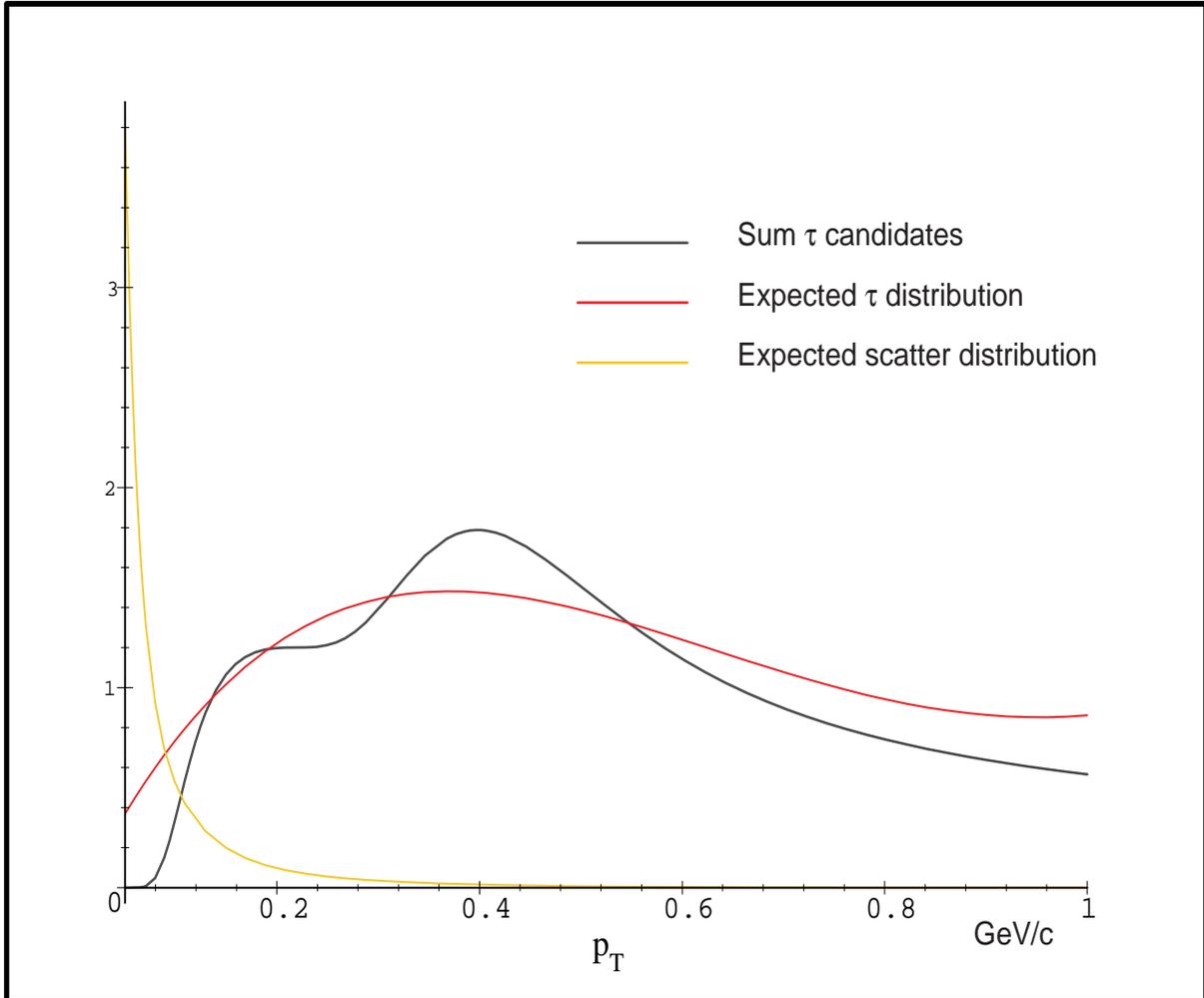
Shown is an example of a method to calculate the signal / background using continuous distributions.

- Better understanding of systematics
- Can easily be computed
- Easy to vary assumptions

The 5 t candidates are used in the following demonstration using p_T , but can be extended to the other 3 parameters.



Individual transverse momentum distributions for the 5 tau candidates. All are normalized to 1 within the limits of 0 to 1.0 GeV/c.



The sum of the individual distributions shown with the expected tau and scatter background distributions.

In this example, the following is measured by integration, without cuts:

Total number of events : 5.0 events

Total estimated background : 0.18 events

Signal / Background : 28 : 1

$> p_T$ (GeV/c)	Signal	Background	S / B
0.00	5.00	0.180	28
0.10	4.97	0.167	30
0.15	4.78	0.110	43
0.20	4.49	0.0695	65
0.25	4.20	0.0474	89
0.30	3.88	0.0334	116