Comparison of old vs. new data (Bst-ntuples)

> old data: L > 1.35 fb^{-1} (***red*** crosses)
> new data: L > 1.35 fb^{-1} , p17 included (***black*** histo.)

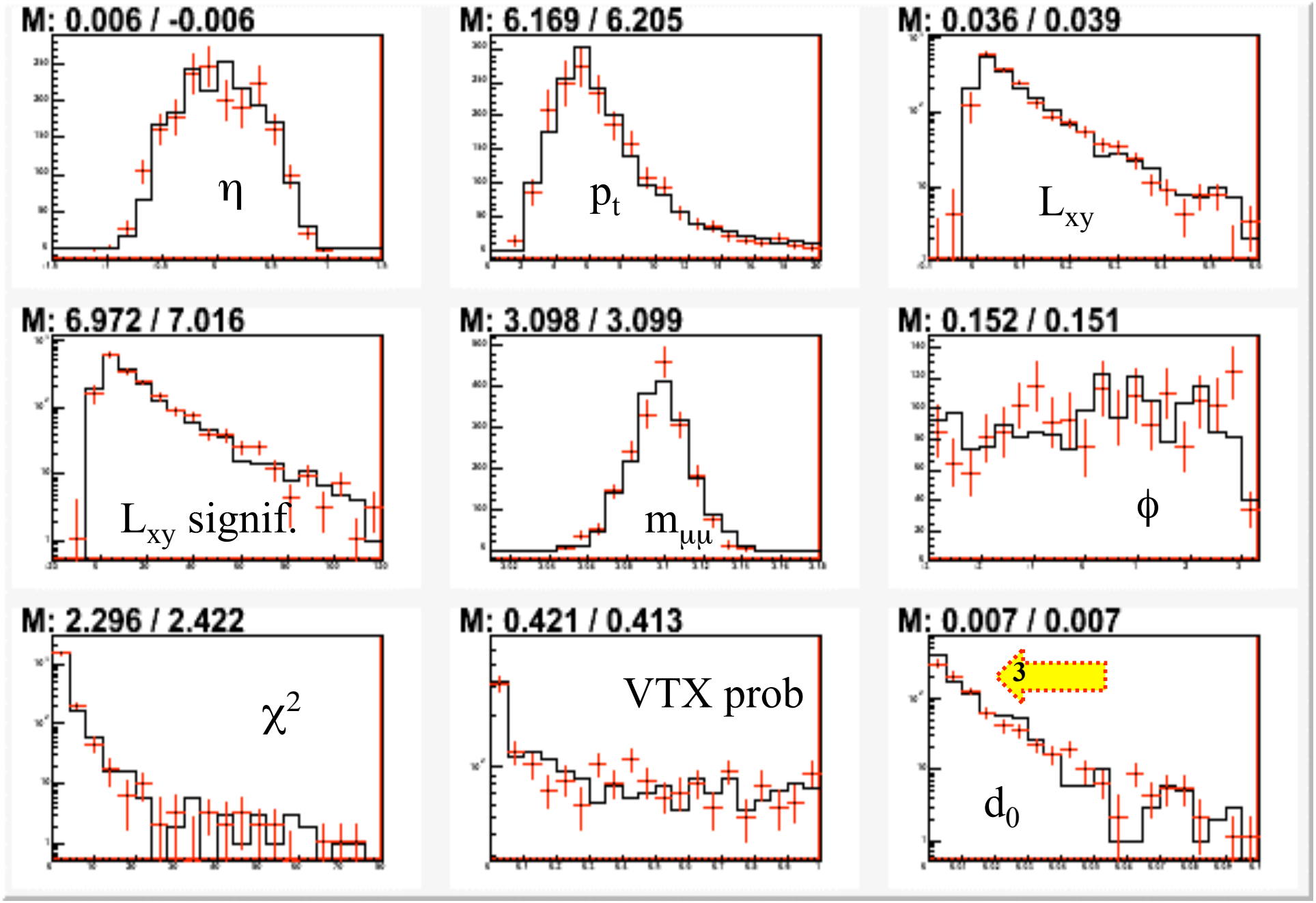
> most of distributions are for B^0_s -> J/ψφ signal window events with sideband windows subtraction

> Using a NN-with**out**-PID and a cut of 0.6

> Some distributions, marked with 1 are analysed further. For that, B**l**t-ntuples are sometimes used.

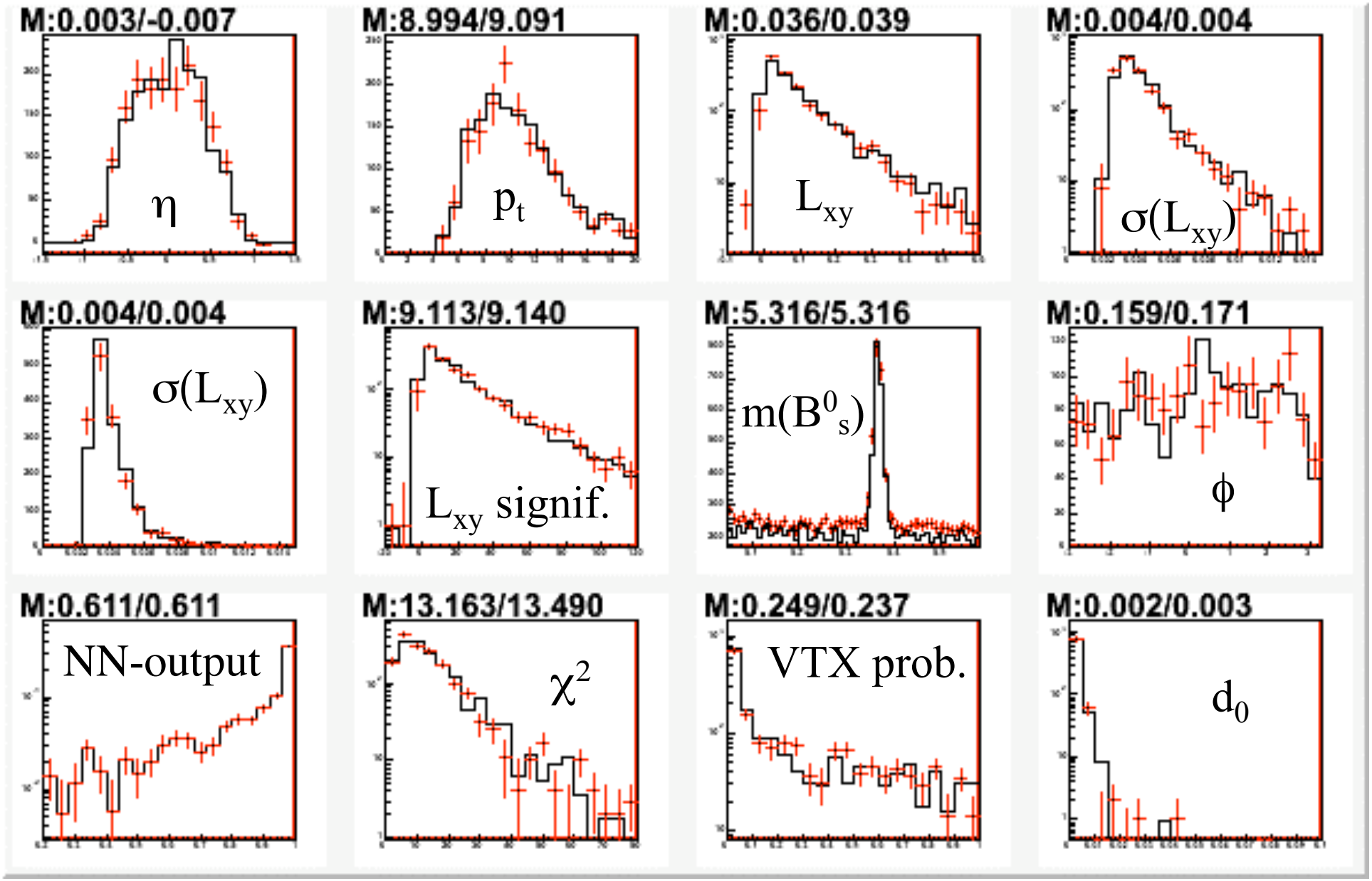
J/ψ

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***



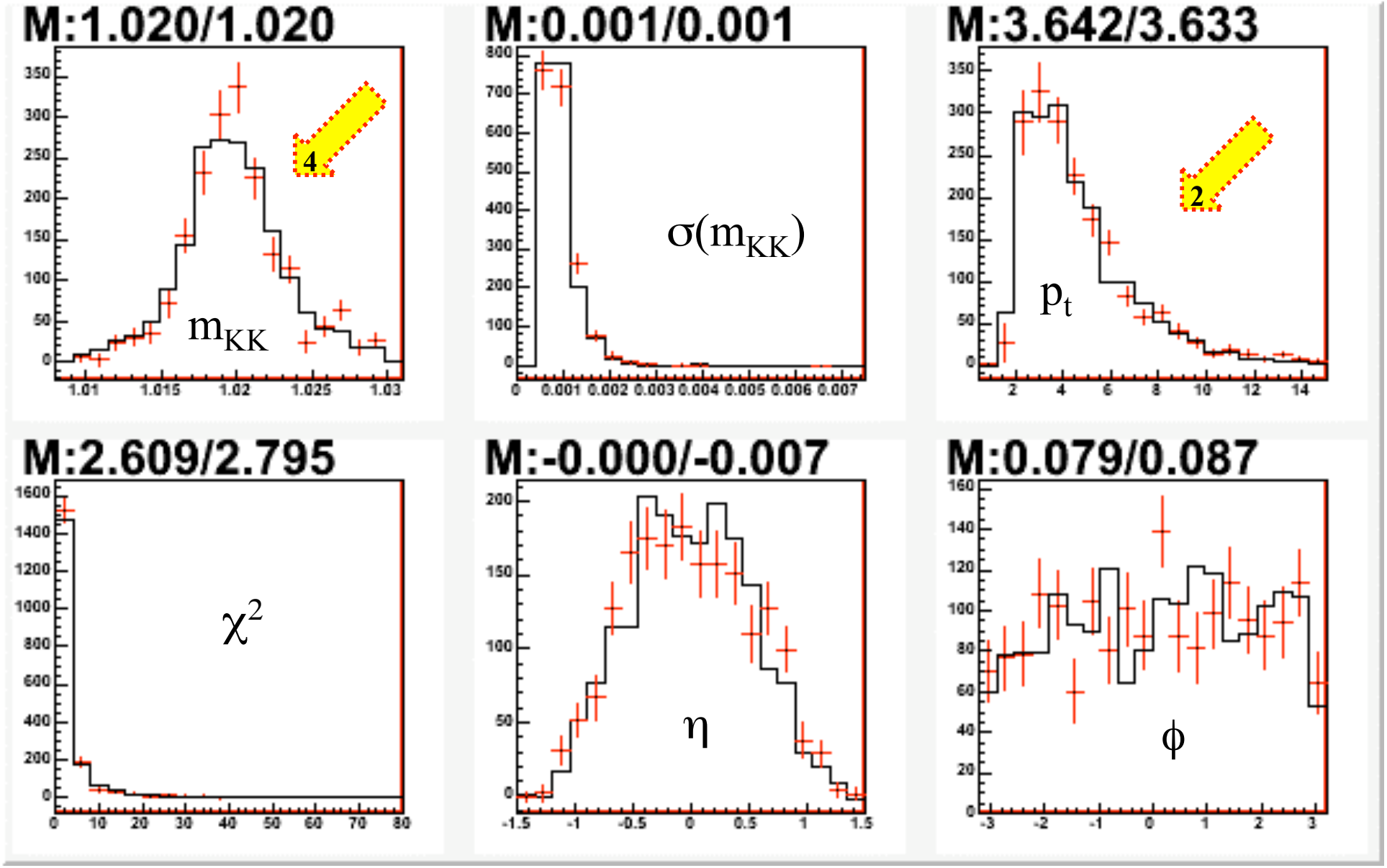
B^0_s

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***



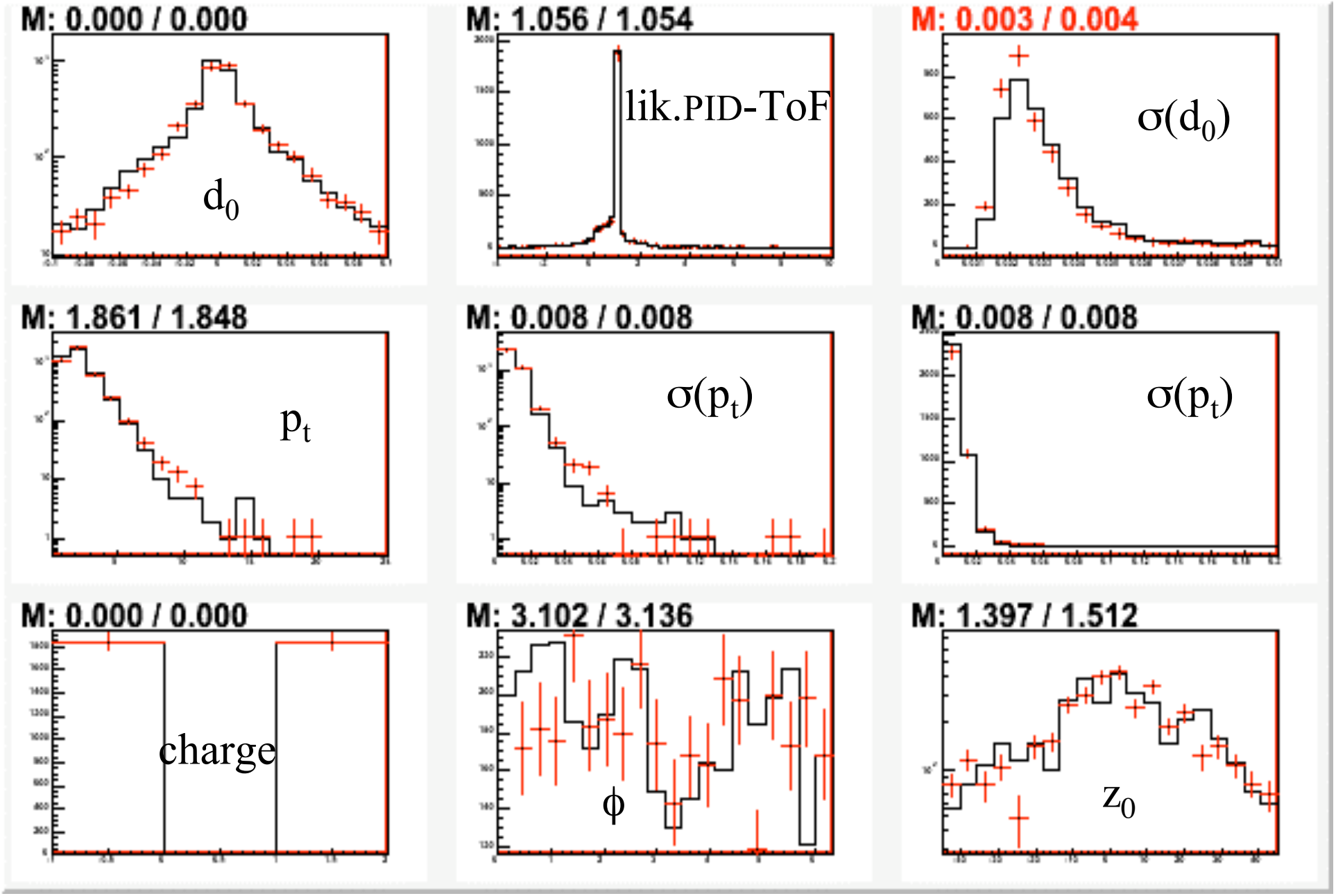
ϕ

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***



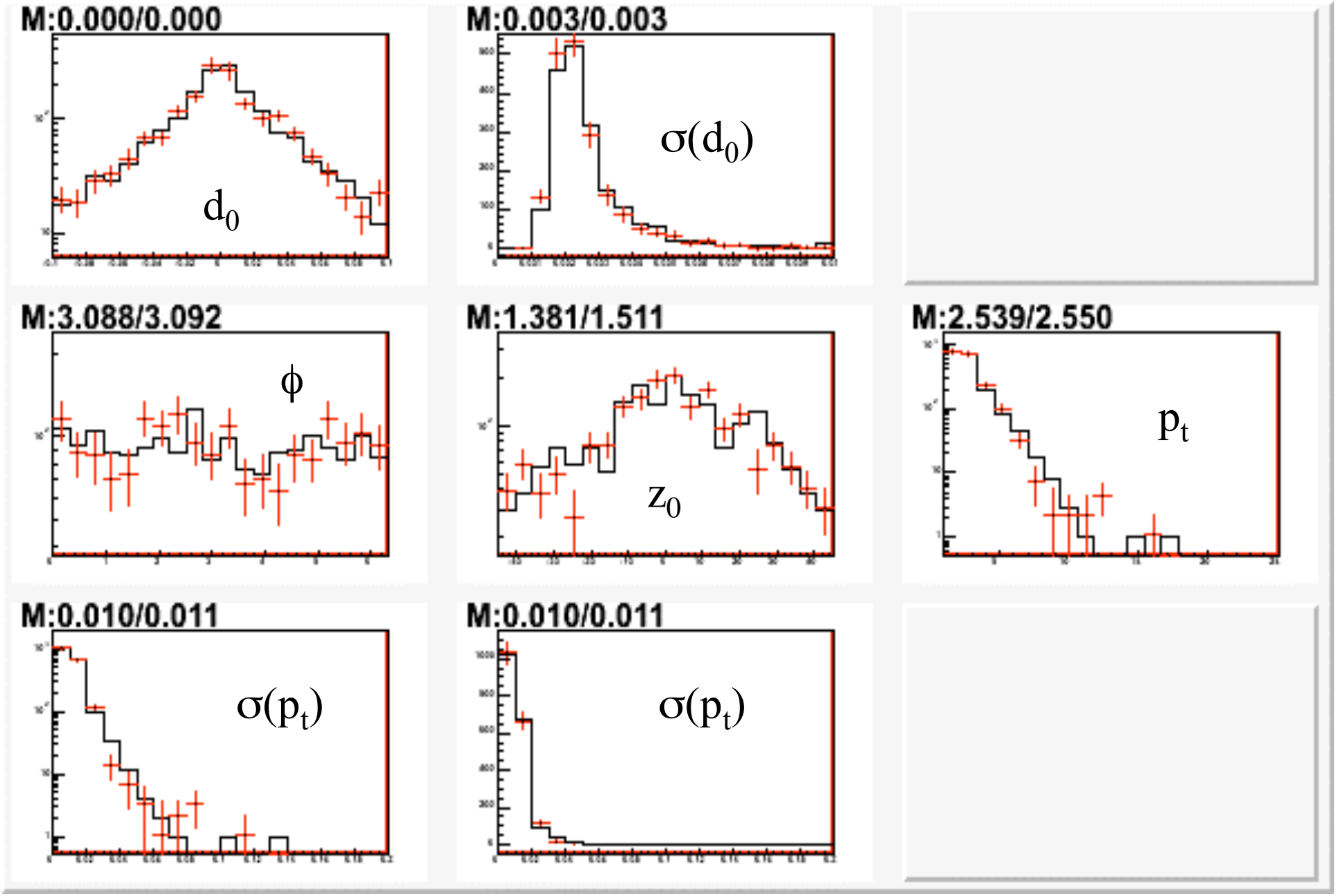
Kaons from ϕ:

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***



+ive muons from J/ψ:

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

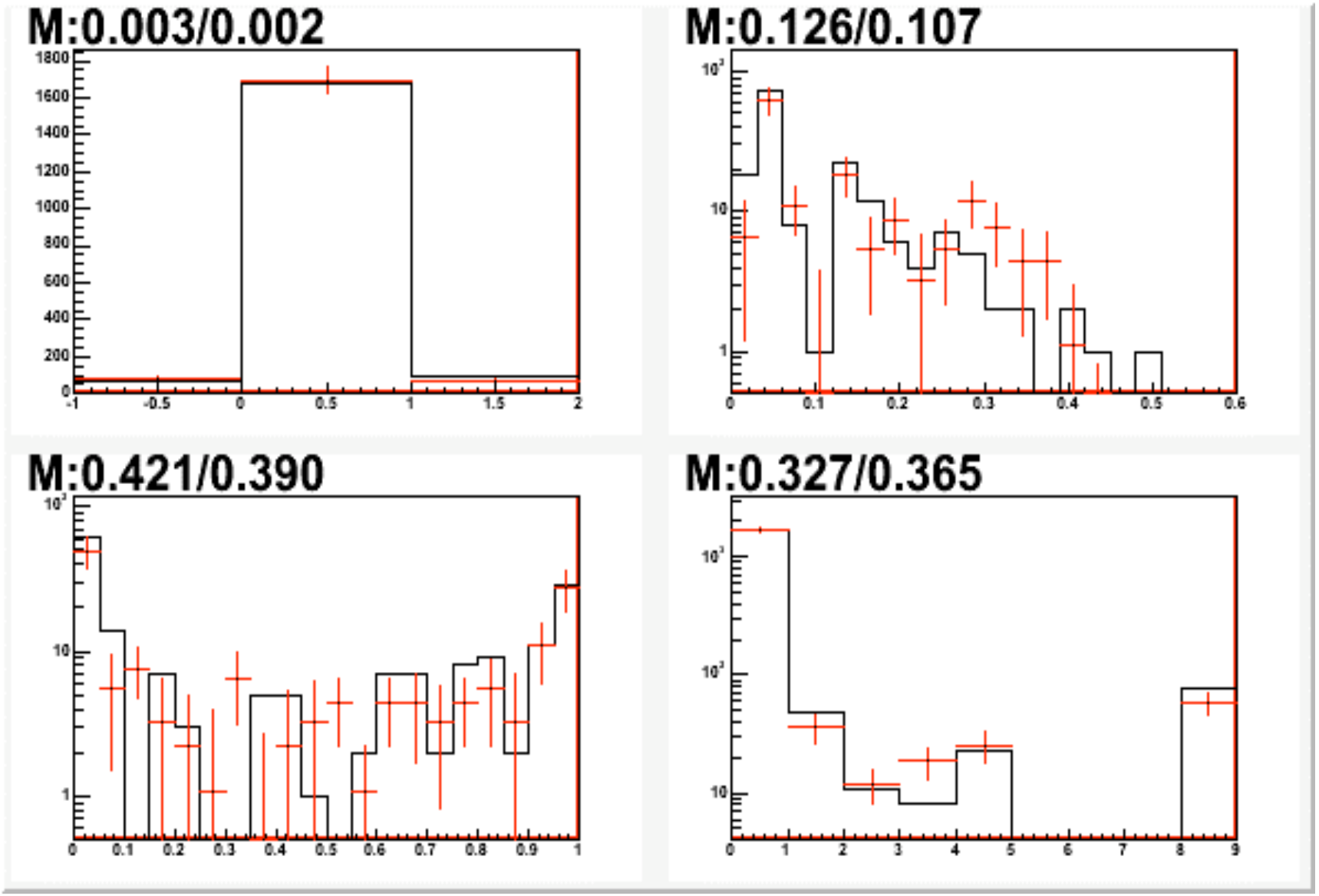


Taggers :

Soft Muon Tagger

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

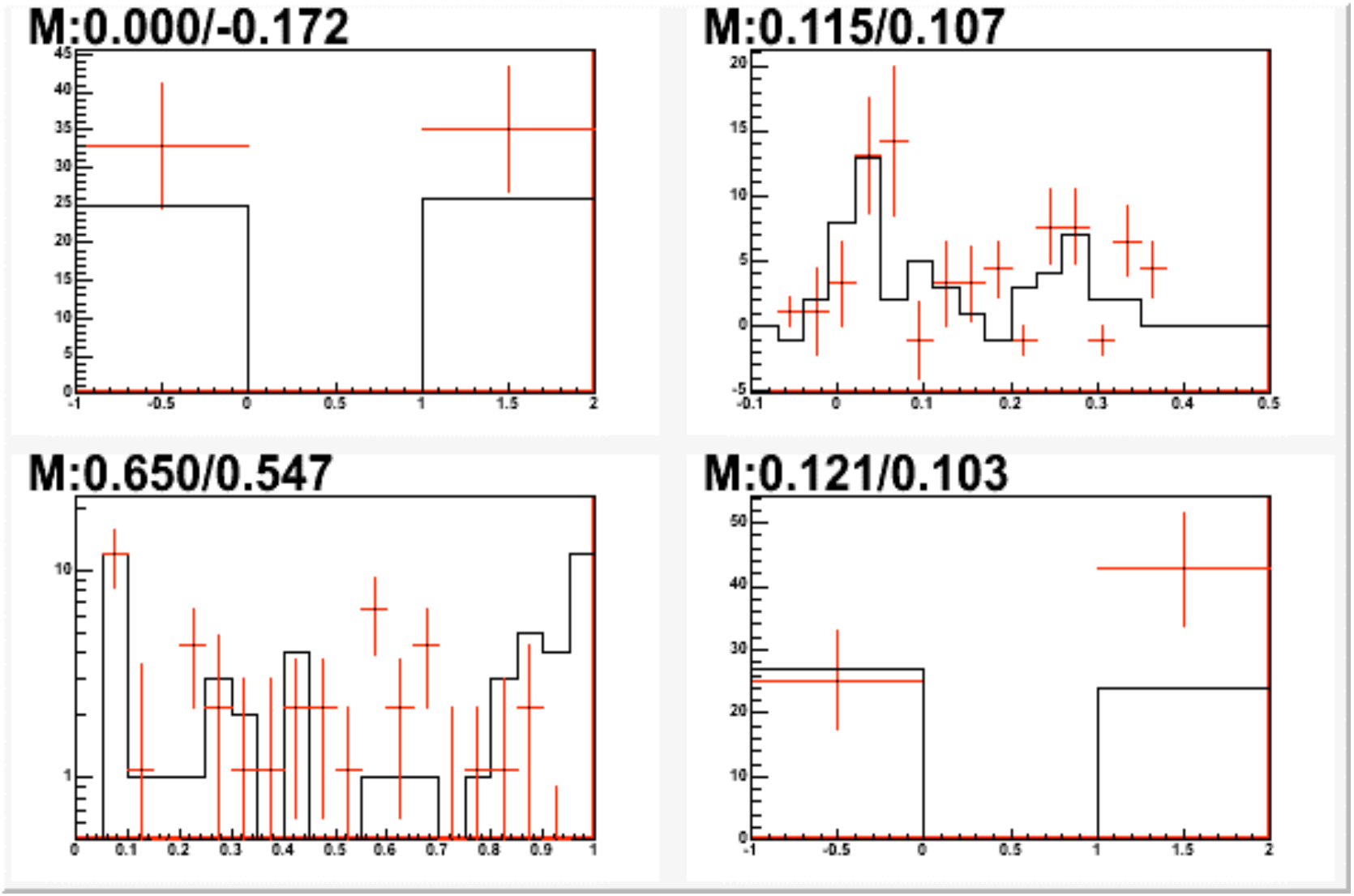
Order of variables: decision , dilution, likelihood, tag type



Soft Electron Tagger

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

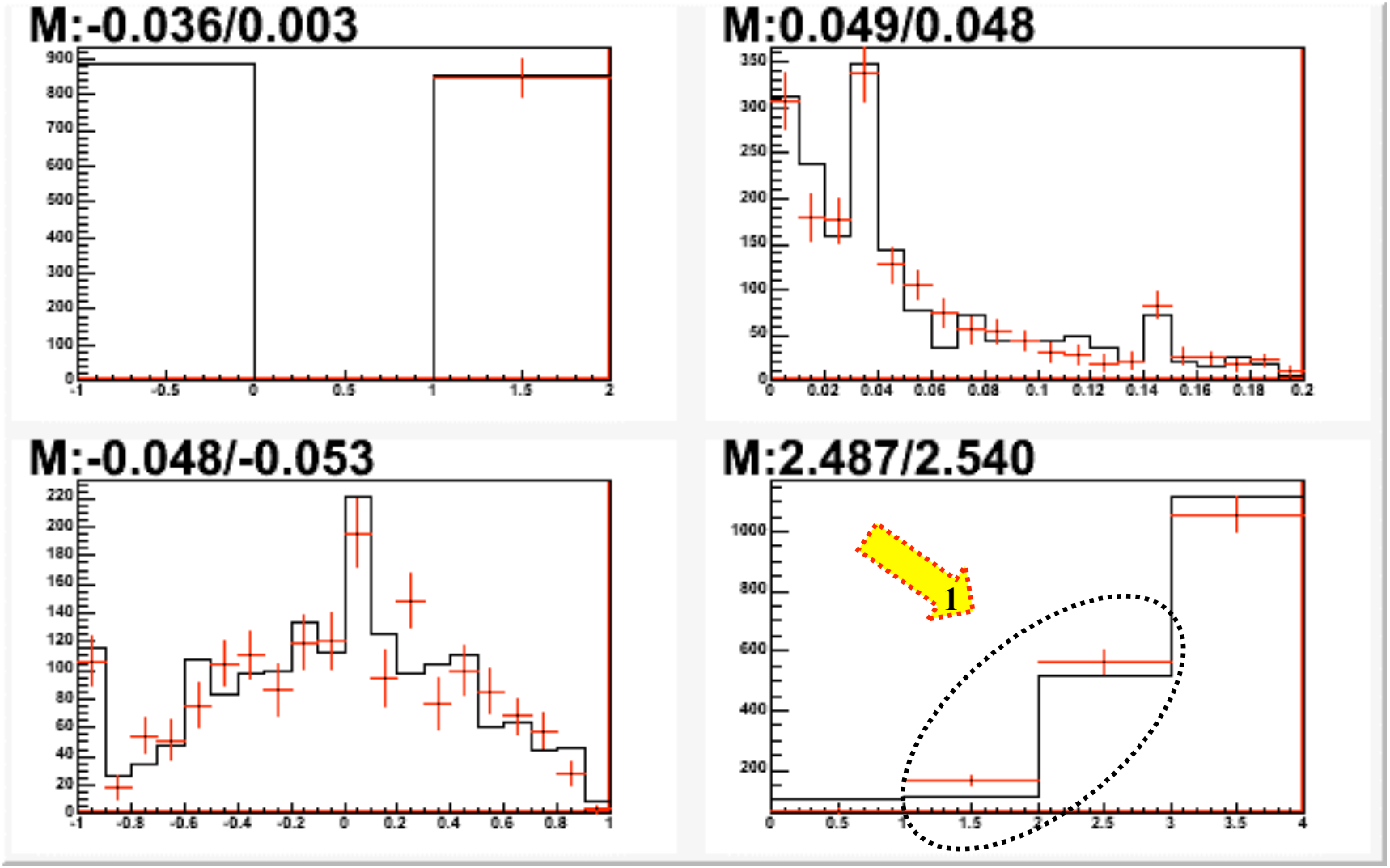
Order of variables: decision , dilution, likelihood, tag type



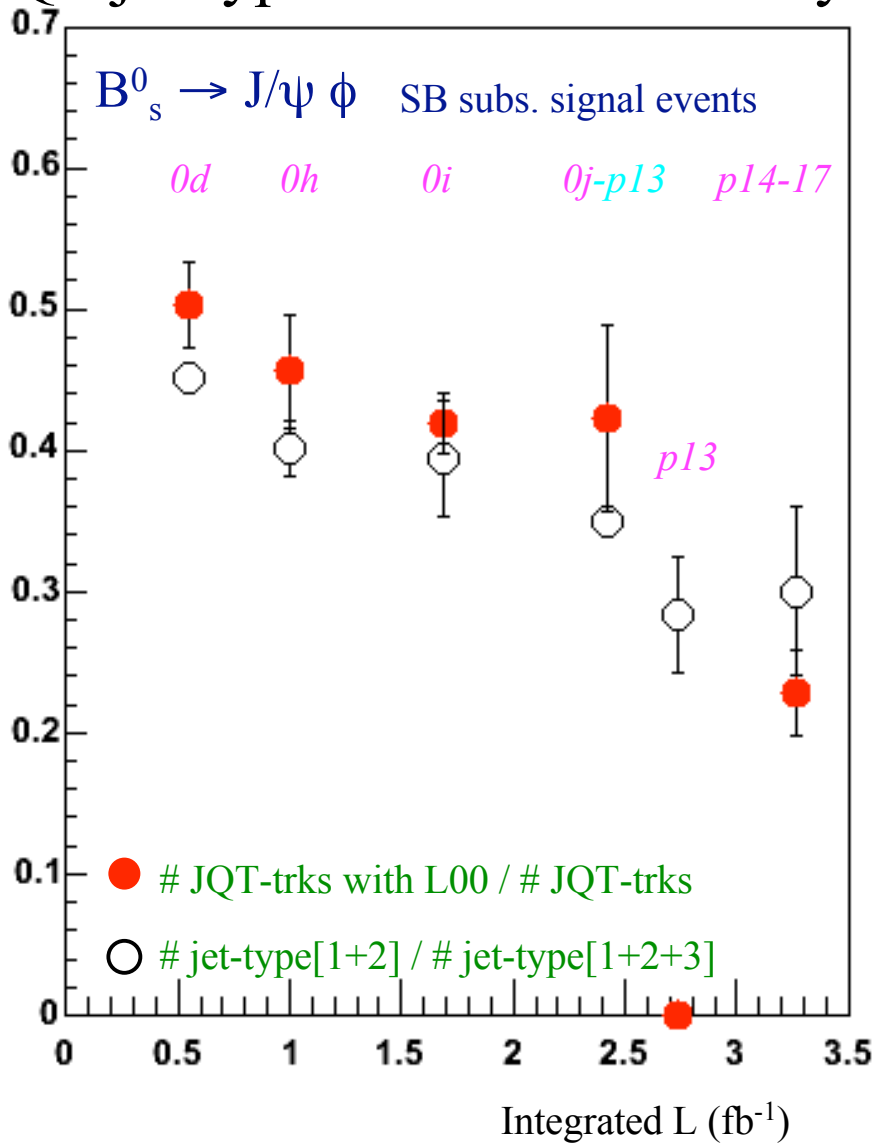
Jet Charge Tagger

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

Order of variables: decision, dilution, jet-charge, tag type



JQT jet-type vs. "L00 efficiency"



BIt-ntuples 0.26

Errors reflect the difference between the results obtained at two sets of Signal/SB windows

SB1: 5.2861-5.3131
Signal: 5.3400-5.3940
SB2: 5.4211-5.4481

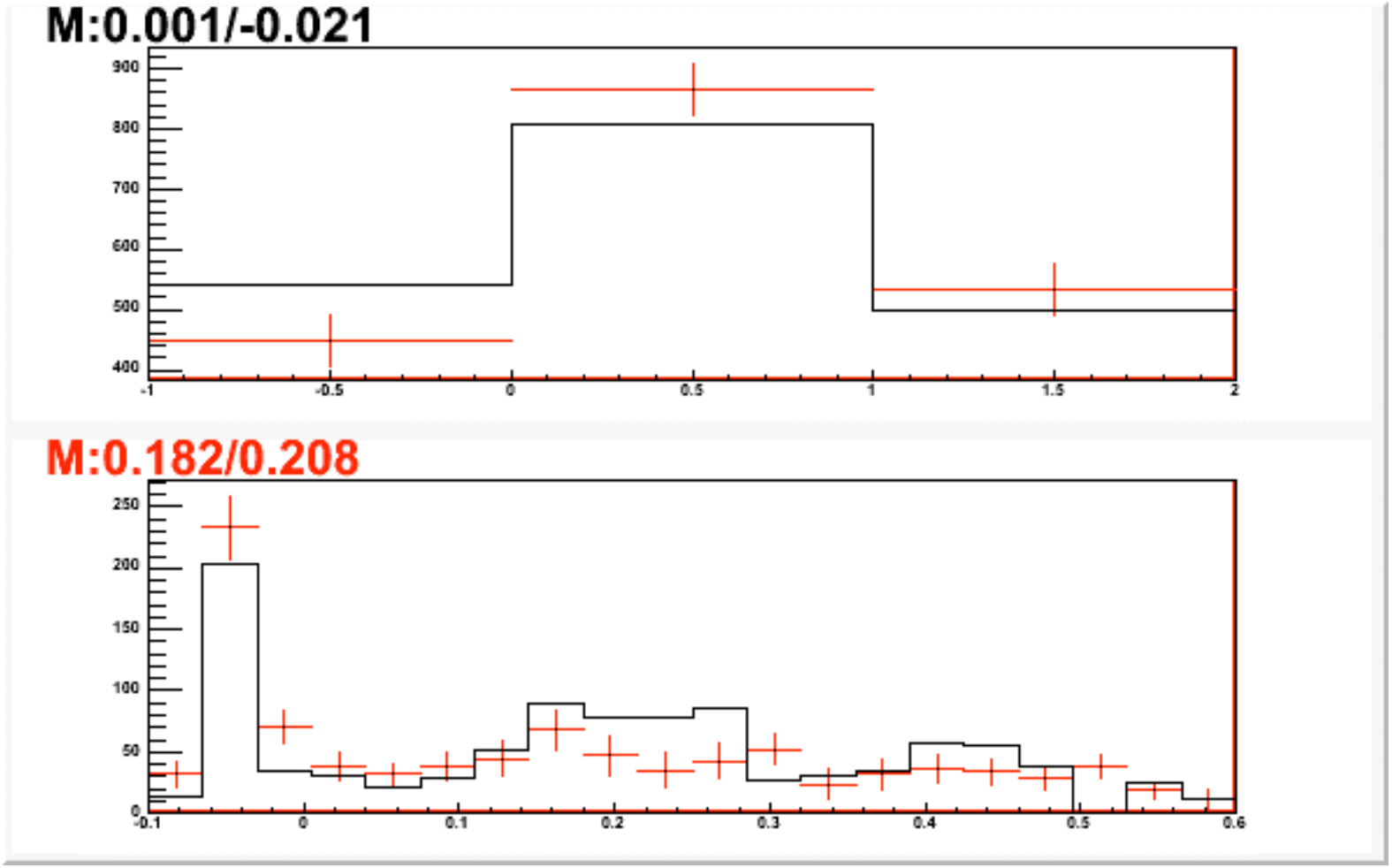
SB1: 5.175 - 5.202
Signal: 5.3400-5.3940
SB2: 5.547 - 5.575

⇨ The variation of the JQT performance follows approximately that of the L00

Same Side Tagger (NN – SSKT)

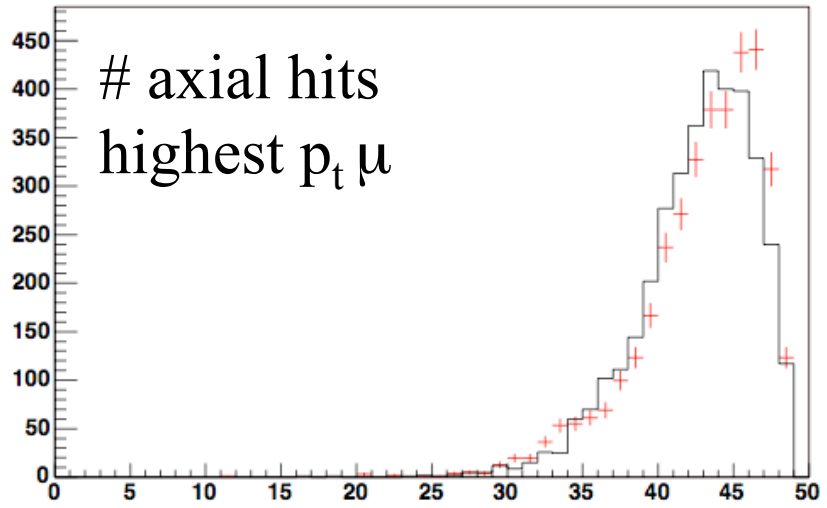
Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

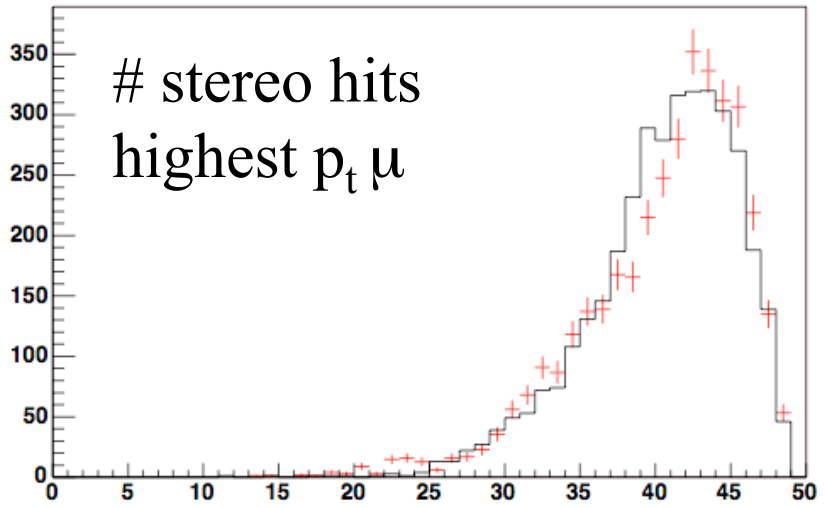
Order of variables: decision, dilution

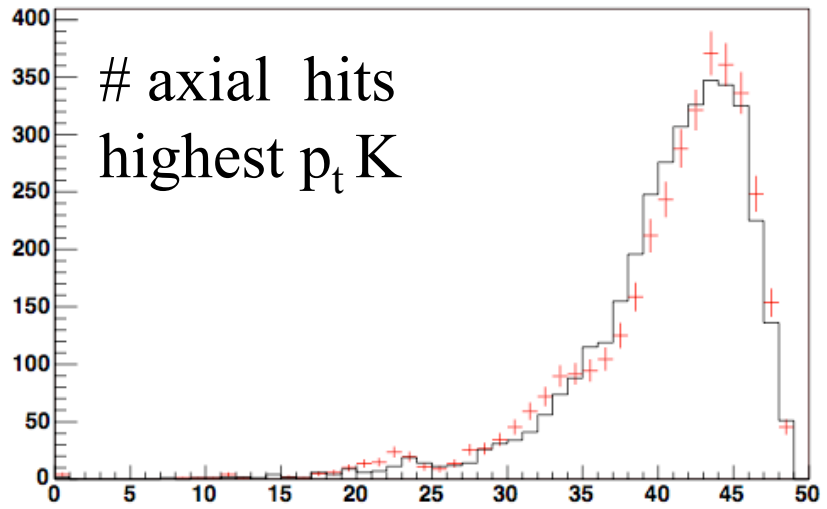


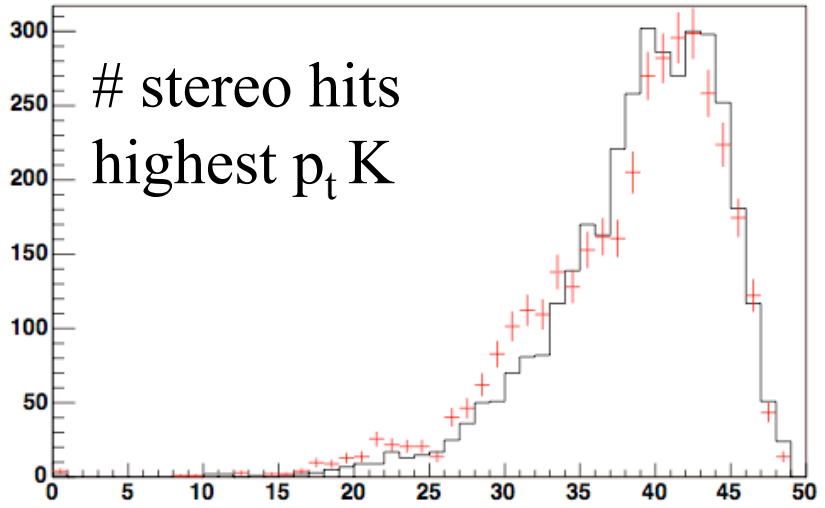
COT hits:

Blt-ntuples, L<1.35 ***red***, L>1.35 ***black***









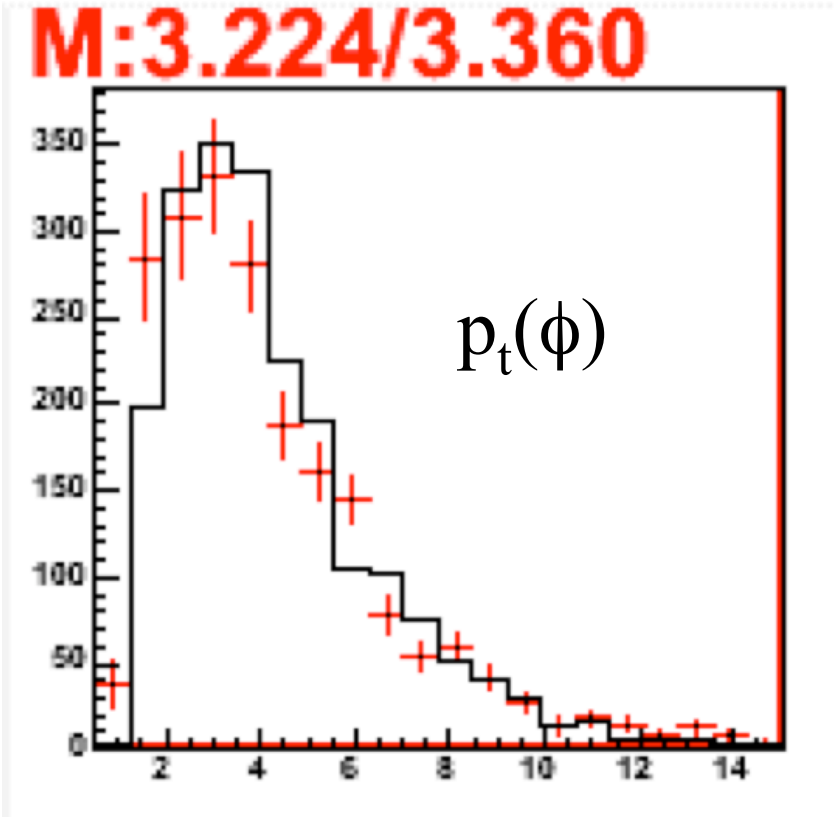
⇨ **L>1.35** data show wider, less peaked to higher values, distributions which may be a reflection of a higher density of charged tracks

Further analysis of some distributions:

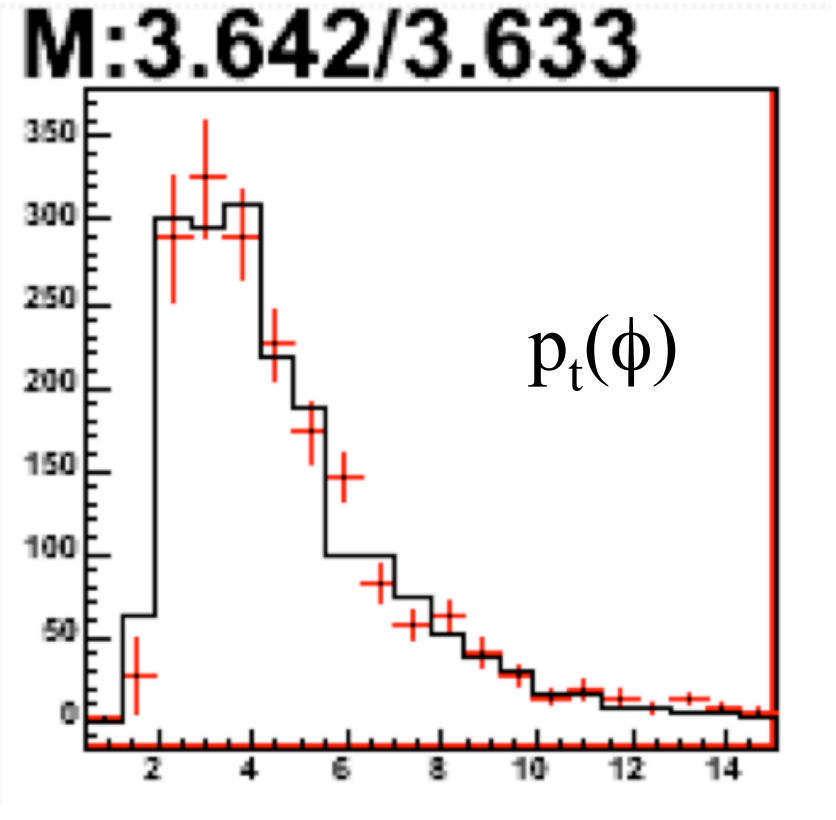
Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

⇨ The use of the bad-calibrated PID in the L>1.35 sample does produce some effect on $p_t(\phi)$

Bst, NN-**with**-PID, 0.6



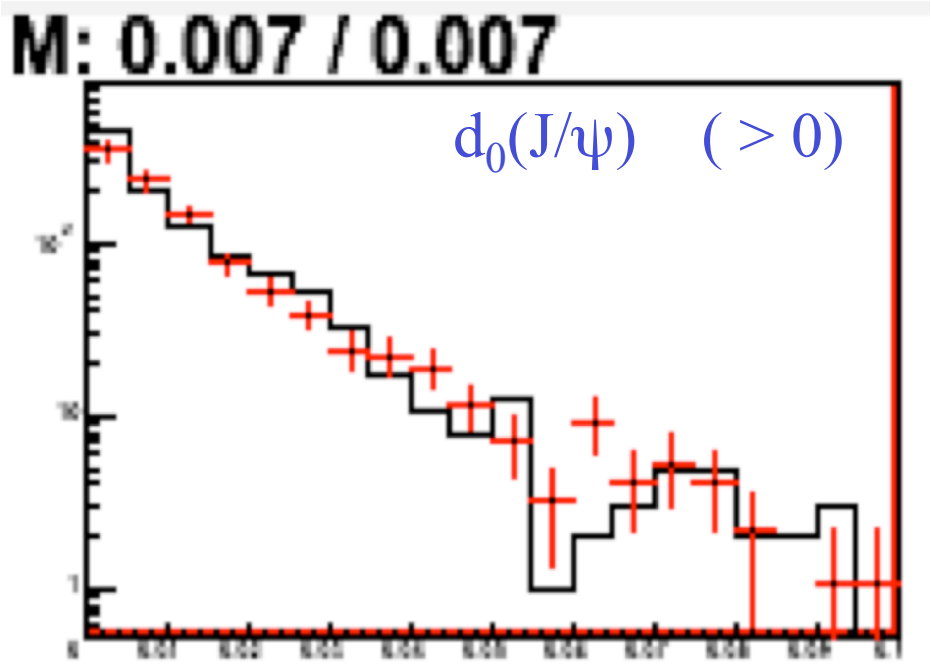
Bst, NN-with**out**-PID, 0.6



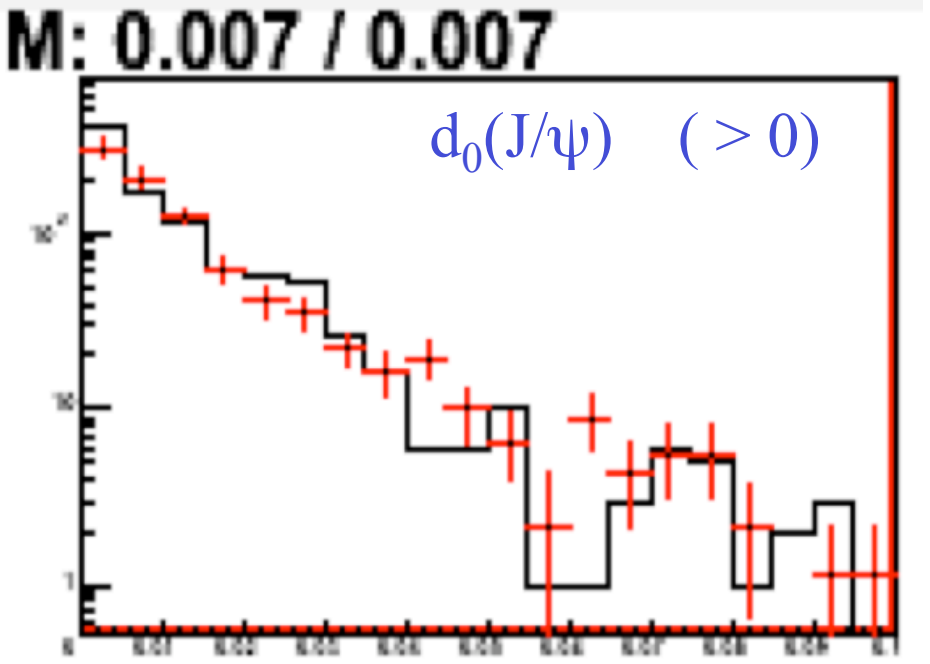
⇨ The use of the bad-calibrated PID in the L>1.35 sample does not produce a significant effect to the d_0 J/ψ distribution

Bst-ntuples, L<1.35 ***red***, L>1.35 ***black***

Bst, NN-**with**-PID, 0.6



Bst, NN-with**out**-PID, 0.6

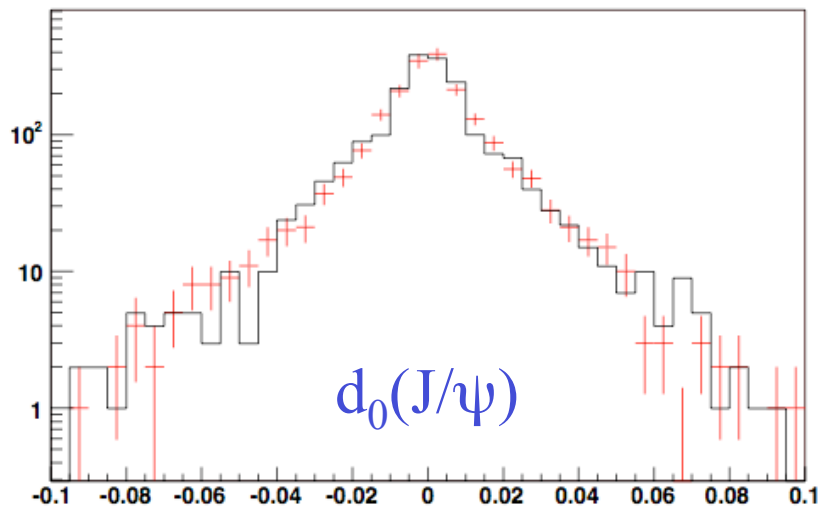


3

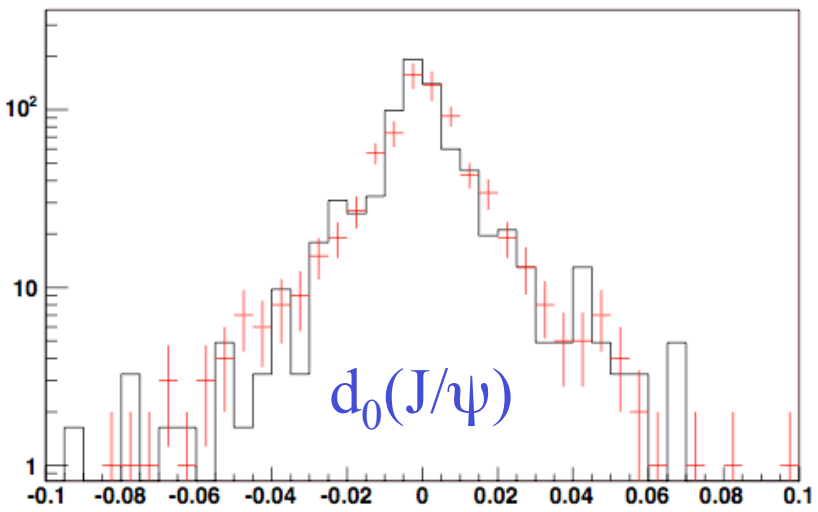
⇨ In addition, it seems that the lower L00 hit content of the μ tracks in L>1.35 is playing also no role in the $d_0(J/\psi)$ distribution

BIt-ntuples, L<1.35 ***red***, L>1.35 ***black***

No L00-hit require.

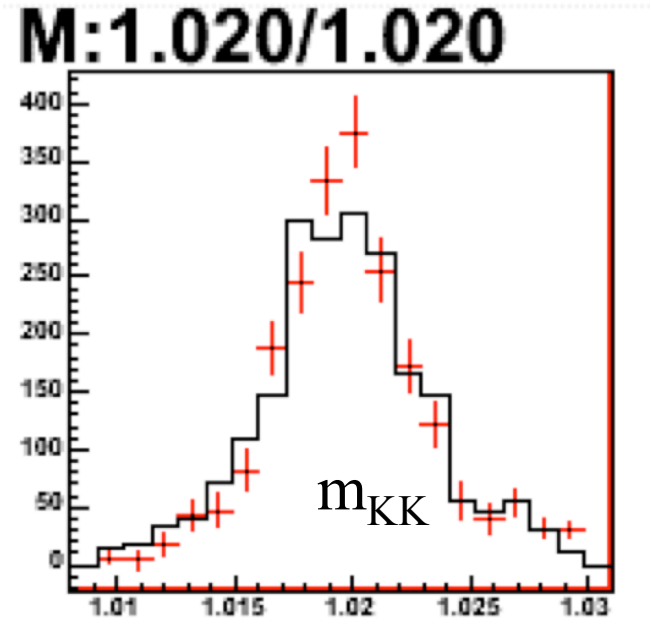


The 2 μ,s w/ L00-hit



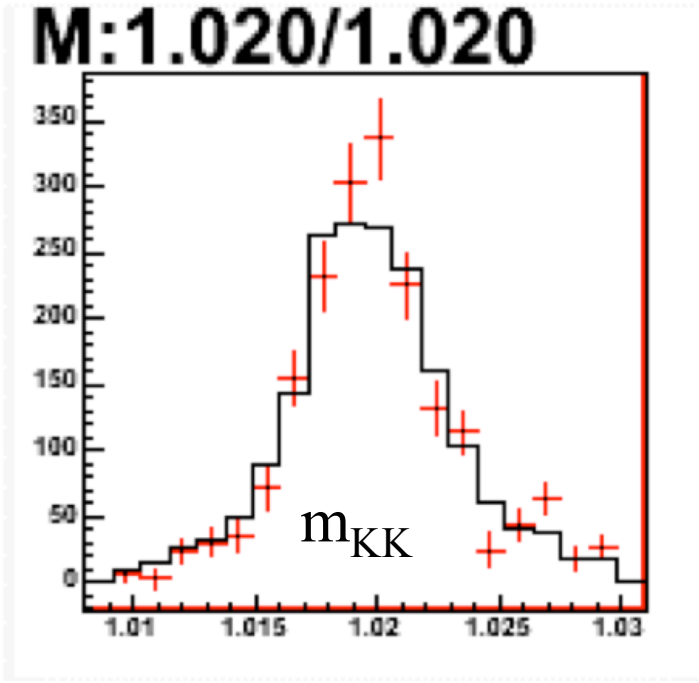
⇨ The use of the bad-calibrated PID in the L>1.35 sample does not produce a significant effect to the ϕ mass distribution

Bst, NN-**with**-PID, 0.6



Bst-ntuples,
L<1.35 ***red***,
L>1.35 ***black***

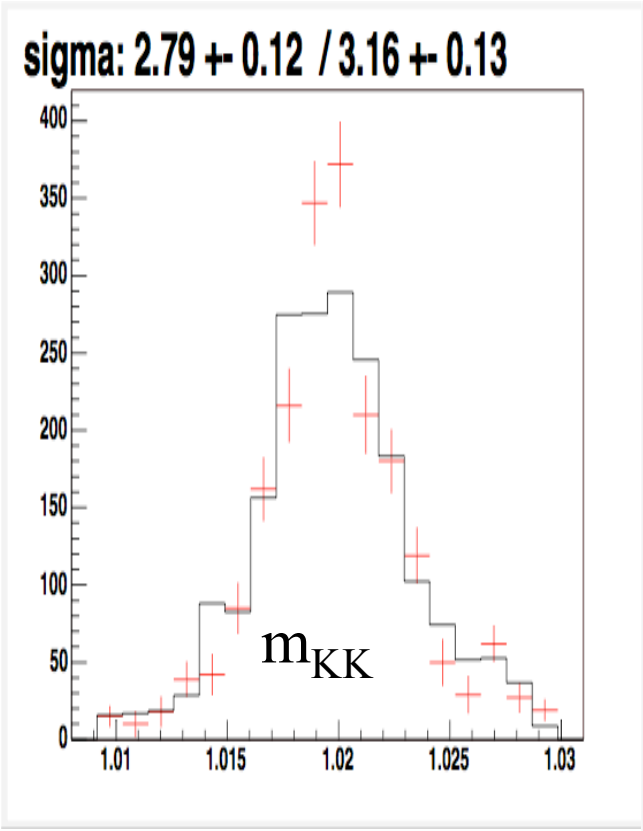
Bst, NN-with**out**-PID, 0.6



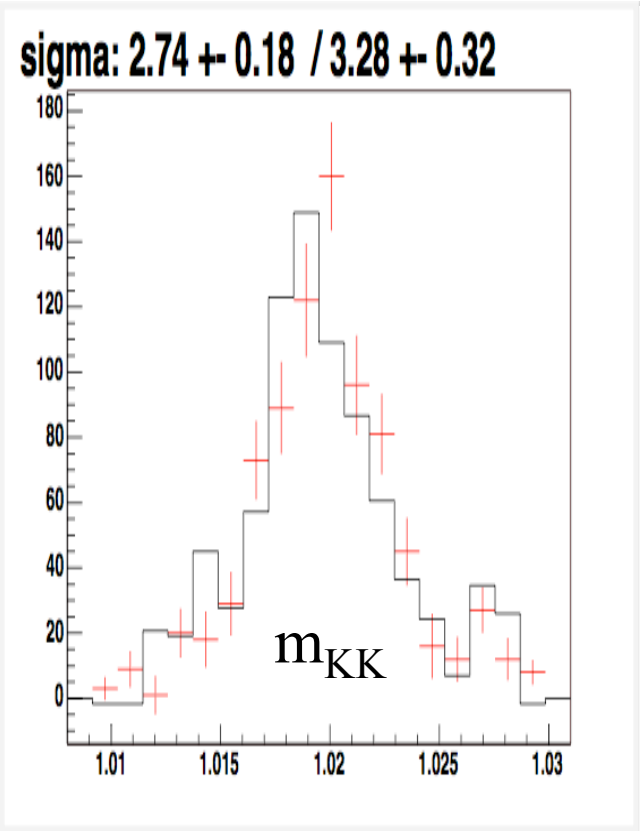
⇨ In addition, it seems that the lower L00 hit content of the tracks in L>1.35 is playing also no role in the ϕ mass distribution

BIt-ntuples 0.26, L<1.35 ***red***, L>1.35 ***black***

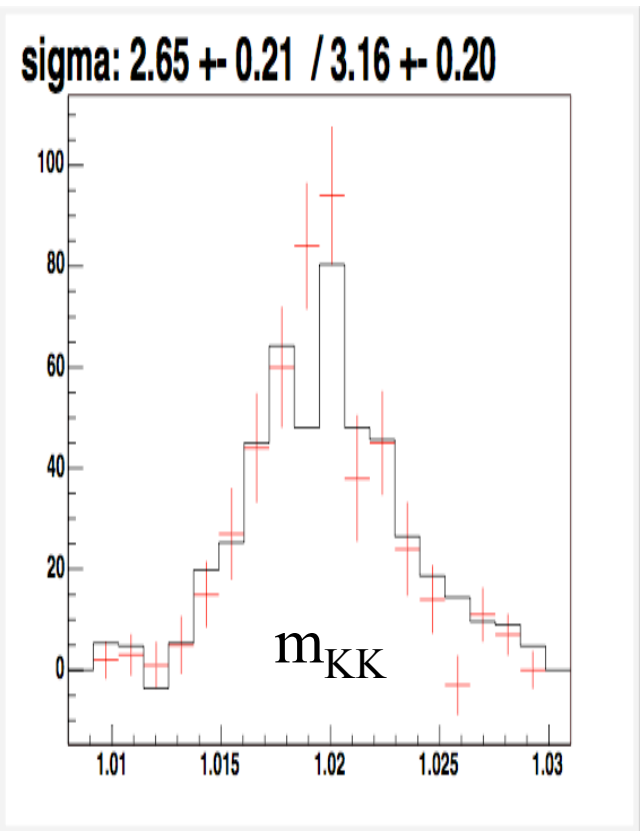
No L00-hit require.



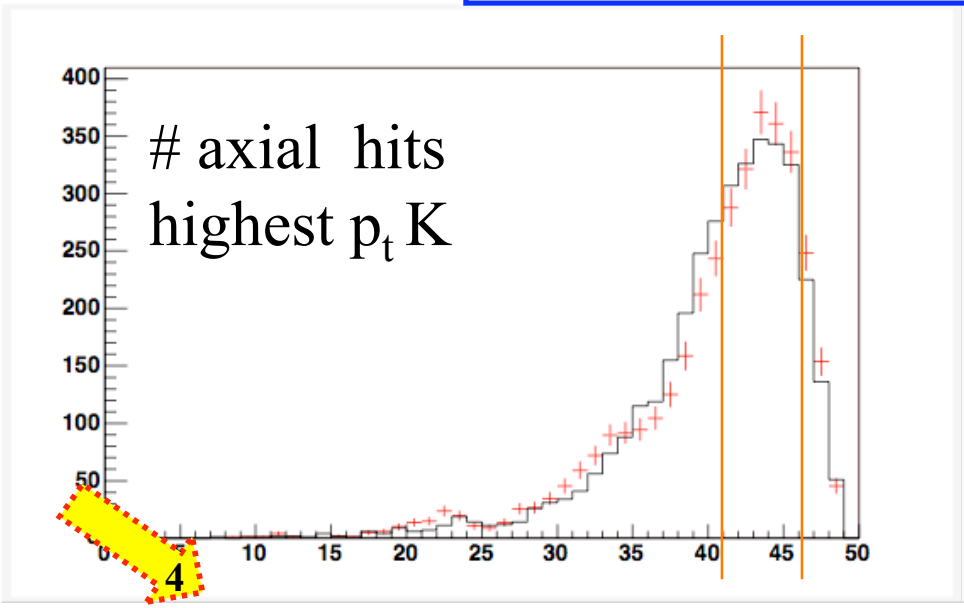
The 2 K,s w/ L00-hit

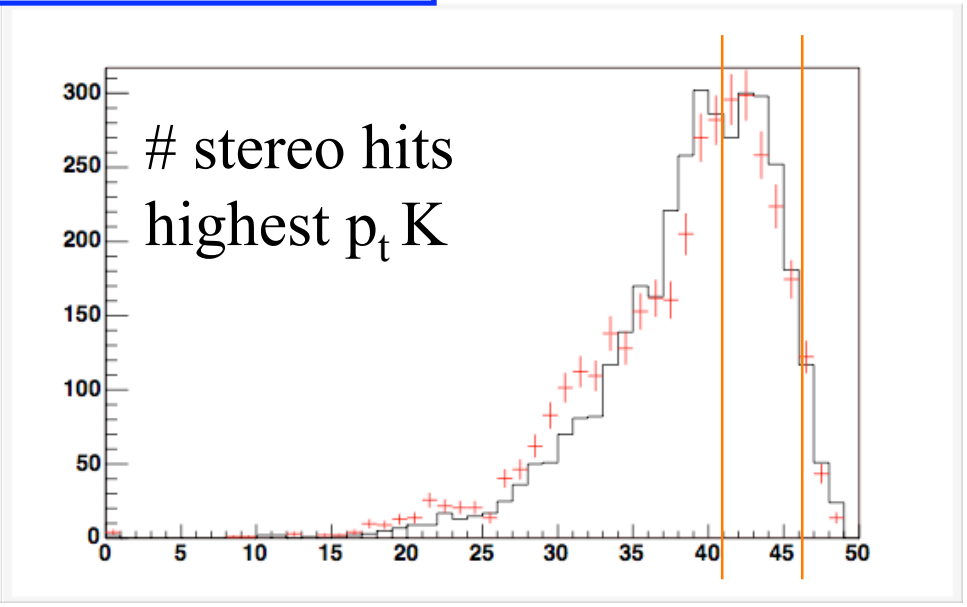


The 2 K,s no L00-hit

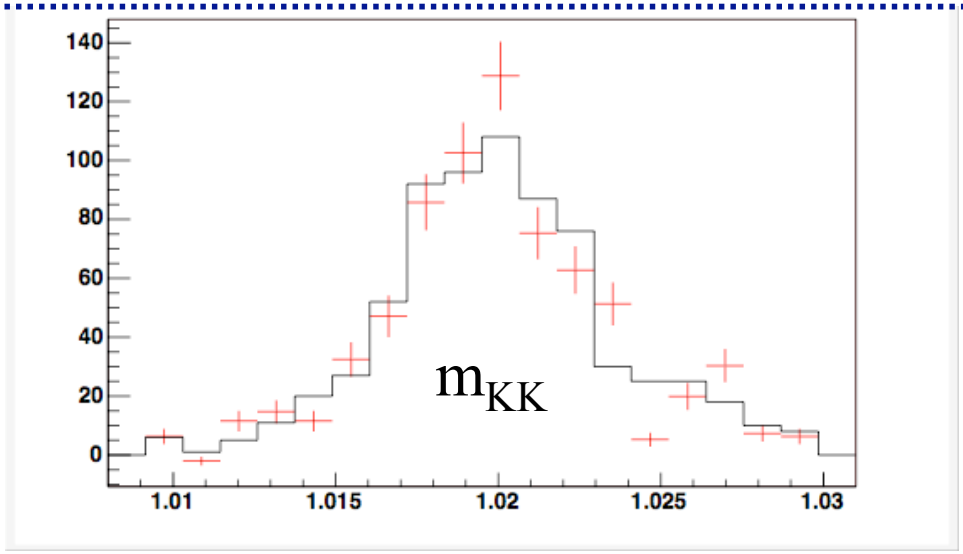


Blt-ntuples, L<1.35 ***red***, L>1.35 ***black***





(Axial+Stereo): 82 < hits < 92 highest p_t K
80 < hits < 90 the 2nd K



⇨ restricting to the same number of COT hits seems to help in the comparison; however the statistics is poor