# Pass0 Analysis: <br> SVT Hits and Timing II 

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SVT Hits and Timing Data

- Previous talk demonstrated that the 8ns timing cut in the strip-clustering was too aggressive
- Reconstruct some 2019 data using default value of 8 ns and also with a looser cut of 20 ns
- batch farm was experiencing hardware issues, so only reconstructed one set of skims, 10104 bottom FEE
- Compare output


## Two-strip Cluster $\delta$ Hit Times Layer 1

module_L1b_halfmodule_axial_sensor0 str...

module_L1b_halfmodule_axial_sensor0 str..


FinalStateParticles_KF - kf electron - modul...


Gain ~1k two-strip clusters Better position and resolution

## Two-strip Cluster $\delta$ Hit Times Layer 7

module_L7b_halfmodule_axial_hole_sens...

module_L7b_halfmodule_axial_hole_sens...


FinalStateParticles_KF - kf electron - modul...


Gain ~2k two-strip clusters Better position and resolution

## Track \& Cluster Times 8ns

Track time bottom

cluster time bottom


Track time - cluster time bottom


## Track \& Cluster Times 20ns

Track time bottom

cluster time bottom


Track time - cluster time bottom


## Energy, Momentum, E/p 8ns

Bottom electron cluster energy


Track momentum bottom


EoverP bottom


## Energy, Momentum, E/p 20ns

Bottom electron cluster energy


Track momentum bottom


EoverP bottom


## Track Momentum 8ns

Track momentum bottom


## Track Momentum 20ns

Track momentum bottom


## E/p 8/20 ns

FinalStateParticles_KF - fiducial - kf electron - EoverP bottom


## Summary

- Opening up the time window for strip clustering from 8ns to 20s does not appear to introduce any appreciable background
- delta-time distribution ~baseline resolved
- Promotion of single-strip clusters to two-strip clusters leads to an improvement in the track momentum reconstruction.
- 20ns should be the default for further processing unless we can achieve significant improvements in the time resolution from fitting the APV25 waveforms.

