SVT Track-Based alignment Status

1. Use millipede to align SVT with cosmic ray data.

2. Alignment of SVT with Type-1 cosmic events (all horizontal sectors with sixteen layers) demonstrated.

3. Working on Type-2 events - any event with sixteen layers, eight crosses.

4. Full chain from simulation to extracting millipede fit parameters running.

5. Testing code with simulated Type-1 events.
   
   1. Compare Type-2 code results with working Type-1 code in ideal geometry.
   2. Several bugs found - indexing issues.
   4. Sign differences under investigation.
   5. Extracted misalignments approaching expected values.
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-0.10 -0.05 0.00 0.05 0.10
-150
-100
-50
0
50
100
150

Misalignment (mm)

y (mm)

Type 1 events test

Jerry Gilfoyle

CLAS12 SVT Track-Based Alignment
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![Graph showing Type 1 events test results with expected simulation results and Type-1 code results compared.](image)
**DOCA** - distance of closest approach, **myz** - slope in $y-z$ plane.