

Transverse Impact Parameter Resolution & Material Budget for CLIC and FCCee

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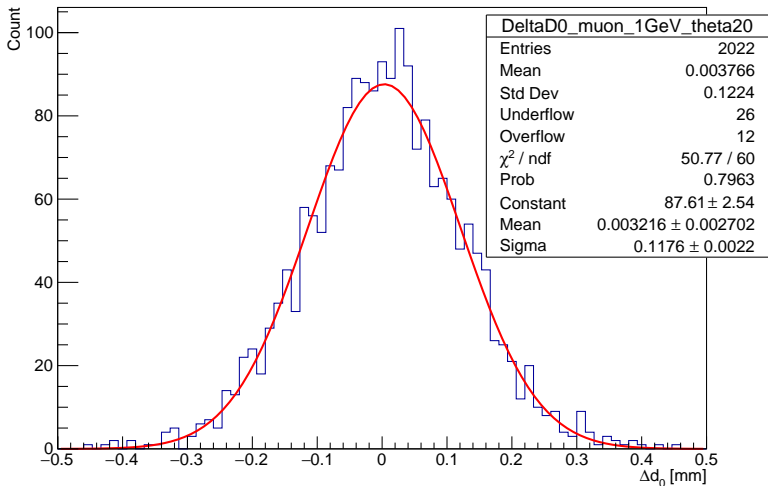


Introduction

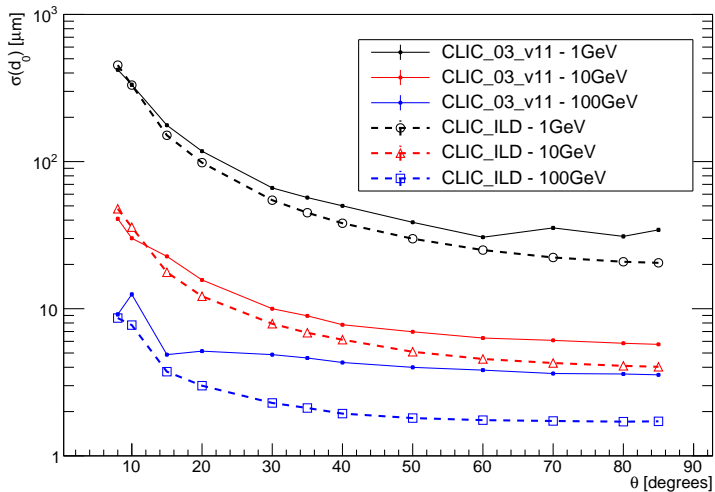


- The 2017-07-12 version of the ILC software was used.
- The *CLIC_o3_v11* and the *FCCee_o5_v03* detector models were used.
- Muons were fired with 1 GeV, 10 GeV and 100 GeV at various angles.
- This was repeated 2000 times.
- Events were reconstructed using truth tracking.
- $\sigma(d_0)$ for a given angle and energy was found by fitting a histogram of $d_{0reco} - d_{0truth}$ with a Gaussian.

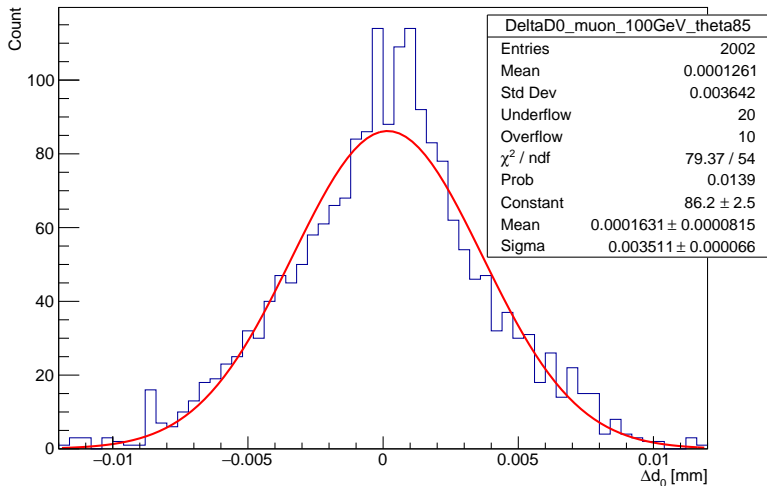
Example of $d_{0_{reco}} - d_{0_{truth}}$



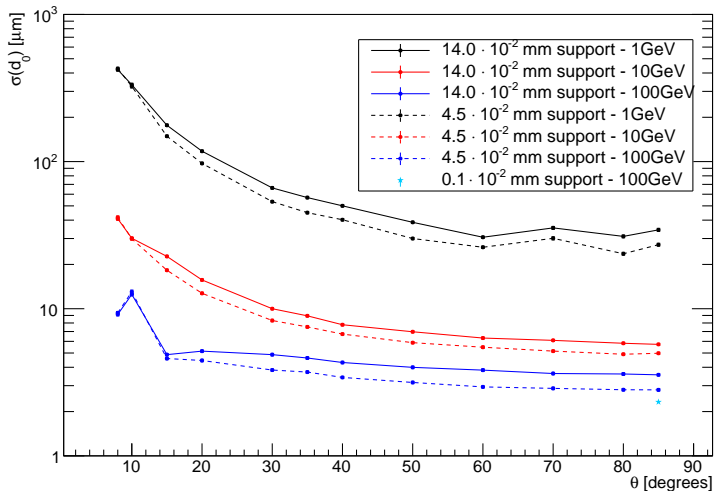
CLIC_o3_v11 vs. CLIC ILD

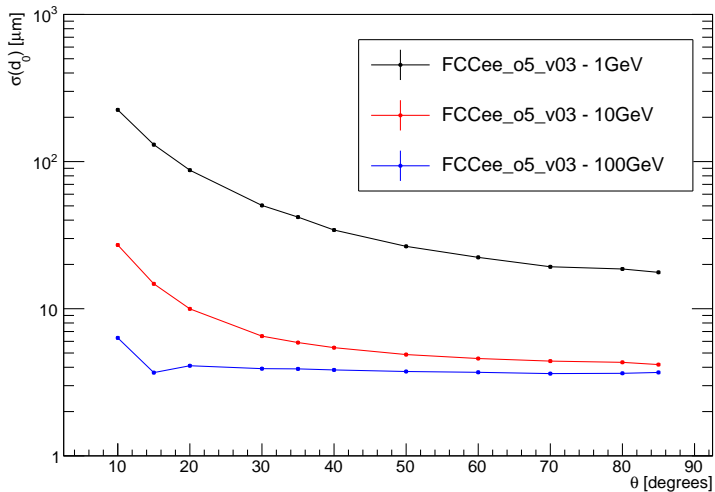


Δd_0 at 100 GeV and $\theta = 85^\circ$

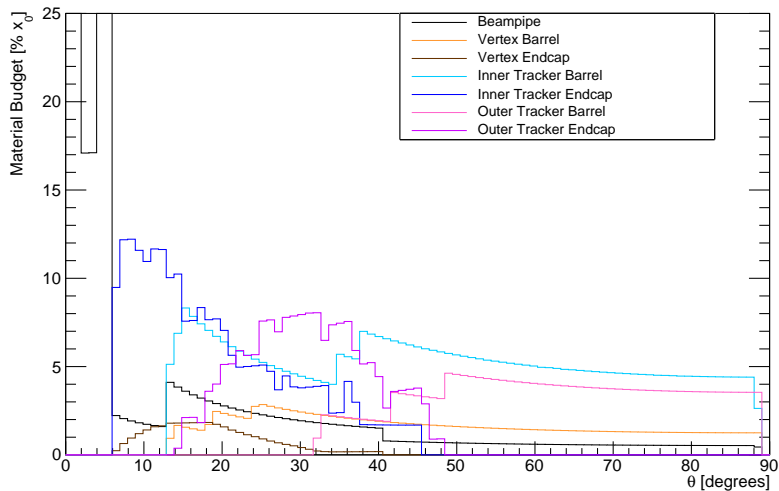


CLIC_o3_v11 vs. Thin CLIC_o3_v11

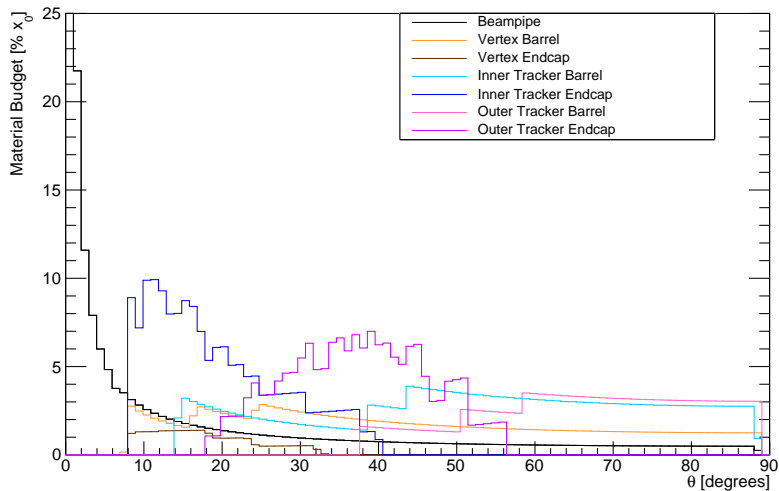




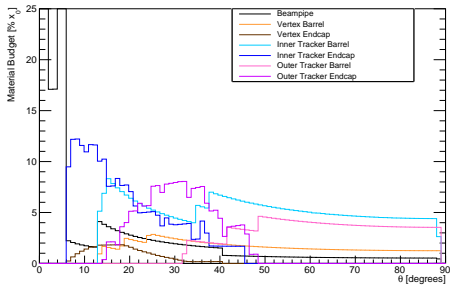
Material Budget CLIC



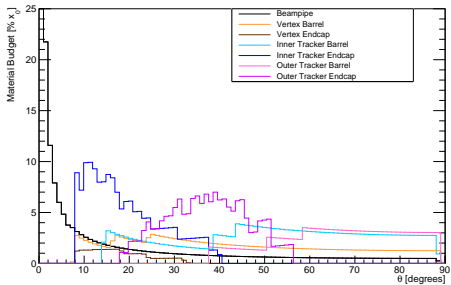
Material Budget FCC



Both



(a) CLIC



(b) FCC