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Modeling Center-of-Mass Energy Precision using Dimuons and Bhabhas at ILC

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Energy precision at the International Linear Collider (ILC) at 250 GeV is evaluated. To do so two difermion final states of $\mu^+\mu^-$ (dimuon), and e^+e^- (Bhabha) are used. Beam dynamics are simulated using GuineaPig++ and event generation by KKMC for dimuons and BHWIDE for Bhabhas. A new Monte Carlo, GP2X, is written to convolve the beam dynamics with event generator output. The detector resolution is approximated with the ILC detector concept. In the analysis we investigate the energy precision of \sqrt{s} as well as the energy spread of the beams.

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