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High Precision ILC Tracker Momentum-Scale Calibration with Particle Decays

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A prime target of the ILC physics program is the precision measurement of the masses of known fundamental particles such as the top quark and the Higgs, W, and Z bosons. The measurement of the absolute center-of-mass energy scale is a primary issue for most determinations, and this will rely critically on the knowledge of the tracker momentum scale. By using particle decays, especially of K^0_S and Λ, one can constrain the tracker momentum scale and as a by-product improve the measurements of the masses of various hadrons. This method if proven realistic has the potential to open up a comprehensive precision polarized Z scan physics program in which the center-of-mass energy systematics are under good control.

Time Zone

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