Contribution ID: **143** Type: **not specified**

Heavy quark production in high energy electron positron collisions at ILC250

Wednesday 17 March 2021 10:20 (20 minutes)

We report here the experimental prospects on the measurement of cross section and the forward-backward asymmetry for quark and antiquark production in electron positron collisions at 250 GeV at the International Linear Collider operating polarised beams. Thanks to the beam polarisation, we can separate the four independent chirality combinations of the electroweak couplings maximizing in this way the sensitivity to new physics. We discuss the results for several quark flavours in the final state.

To achieve the goal of the measuring at the per mile level the Z-$q\bar{q}$ couplings, possible by cumulating 200O fb-1 at 250 GeV, we developed various experimental methods, inspired by LEP1 and SLC. These methods require exceptional experimental capabilities for tracking, vertexing and particle identification capabilities, specially high power of discrimination for charged hadron identification with a precise $\frac{dE}{dx}$ measurement. These studies have been performed using the International Large Detector model and simulation tools.

Time Zone

Europe/Africa/Middle East

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Session Classification: PD3: Physics Analyses

Track Classification: Physics and Detectors Tracks: PD3: Physics Analyses