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Top Quark Physics at a Future Linear Collider

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The International Linear Collider and Compact Linear Collider projects aim to build a linear electron-positron collider with a center-of-mass energy well above the top quark pair production threshold. In this contribution an overview is presented of the potential of their top quark precision physics programme. One of the highlights is a precise determination of the top quark mass through a scan of the center-of-mass energy around the pair production threshold, that is expected to yield a total uncertainty on the top quark \overline{MS} mass of less than 50 MeV. The results of a full-simulation analysis are presented, including a discussion of the main systematic uncertainties. Full simulation results are also presented for measurements of the top quark couplings to the Z-boson and the photon are presented. The anomalous form factors are expected to be constrained to better than 1%, significantly beyond the expected precision at the Large Hadron Collider. Further new results are presented for the sensitivity to non-standard top quark decays and its interaction with the Higgs boson.

Oral or Poster Presentation

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