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Prospects for electroweak precision measurements and triple gauge couplings at a staged ILC

In absence of a direct discovery of new particles, precision measurements of the properties of known particles will provide the most powerful probe for phenomena beyond the Standard Model.

Future electron positron linear colliders with polarised beams, like the International Linear Collider (ILC), will provide a unique laboratory for such measurements, complementary to hadron colliders.

In this contribution, we will review in particular the prospects for electroweak precision measurements, like the mass of the W boson, or the weak mixing angle, as well as for measurements of charged triple gauge couplings based simulations of the ILD detector concept for the ILC. In all of these, the exact knowledge of the beam polarisation and the beam energy plays an important role. Therefore we will also discuss the precision determination of these accelerator parameters from collision data.

We will pay special tribute to the most recent discussions concerning a possible first stage of the ILC operating at a center-of-mass energy of 250 or 350 GeV, but also comment of the full ILC running plan.

Experimental Collaboration

ILD

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