

Contribution ID: 7

Type: **Parallel Session Presentation**

Interplay of beam polarisation and systematic uncertainties in electroweak precision measurements at future e^+e^- colliders

Monday, 18 October 2021 19:15 (25 minutes)

Future high-energy e^+e^- colliders will provide some of the most precise tests of the Standard Model. Statistical uncertainties on electroweak precision observables and triple gauge couplings are expected to improve by orders of magnitude over current measurements. This provides a new challenge in accurately assessing and minimizing the impact of experimental systematic uncertainties. Beam polarization may hold a unique potential to isolate and determine the size of systematic effects. So far, studies have mainly focused on the statistical improvements from beam polarisation. This study aims to assess, for the first time, its impact on systematic uncertainties. A combined fit of precision observables, such as chiral fermion couplings and anomalous triple gauge couplings, together with experimental systematic effects is performed on generator-level differential distribution of 2-fermion and 4-fermion final-states. Different configurations of available beam polarisations and luminosities are tested with and without systematic effects, and will be discussed in the context of the existing projections on fermion and gauge boson couplings from detailed experimental simulations.

Primary author: Mr BEYER , Jakob (DESY, Germany)

Presenter: LIST, Jenny (DESY)

Session Classification: Future facilities and experiments

Track Classification: Parallel Sessions: Future facilities and experiments