



Contribution ID: 281

Type: Parallel talk

## Electroweak Physics at FCC-ee

*Saturday 13 July 2019 11:45 (15 minutes)*

The Future Circular Collider with electron-positron beams (FCC-ee) should provide improvements of the electroweak precision measurement concerning Z, W, H and their masses by a large factor over the present status. The unparalleled experimental precision would open, via Electroweak loop corrections, a broad discovery potential for new, at least weakly interacting particles up to high energy scales. The Z boson mass and width, as well as the  $Z \rightarrow b\bar{b}$  partial width, and the forward-backward asymmetries for leptons and quarks can be measured with high precision with the run at the Z pole, where the instantaneous luminosity is expected to be five to six orders of magnitude larger than LEP. As a result, a precise determination of the effective weak mixing angle, as well as of the running electromagnetic coupling  $\alpha_{QED}(m_Z)$  can be extracted directly from the data. Considerable improvements of the strong coupling constant determination down to a precision of  $\Delta\alpha_s(m_Z) \pm 0.0001$  will be possible with the measurements of the hadronic widths of the Z and W bosons.

**Author:** LOCCI, Elizabeth (Université Paris-Saclay (FR))**Presenter:** LOCCI, Elizabeth (Université Paris-Saclay (FR))**Session Classification:** Top and Electroweak Physics**Track Classification:** Top and Electroweak Physics