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## Measuring $Z$ boson couplings to bottom quarks at FCCee

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Global fits to electroweak precision data, comparing the measured values of different quantities with the SM predictions, provide important checks of the SM consistency and sensitivity to beyond-the-SM (BSM) effects. The two most sensitive determinations of  $\sin^2 \theta_{\text{eff}}^{\text{lep}}$ , from the LEP measurement of  $A_{0,b}^{FB}$  and the SLD measurement of  $A_\ell$ ,

are in  $\sim 3 \sigma$  tension with each other, the largest deviation in global electroweak fits.

In this contribution we discuss the possibility to probe at the FCC-ee the interactions between the  $Z$  boson and the bottom quark through a competitive determination of  $A_{0,b}^{FB}$ .

To this extent we aim to reproduce the measurement performed at LEP, exploiting the decay of a  $Z$  boson in a bottom-quarks pair.

The definition of this asymmetry intrinsically requires some sensitivity to the charge of the bottom quark/antiquark in the final state, which represents one of the major challenges of this measurement. By means of a simplified Delphes-based simulation tuned to the IDEA detector at FCC, we plan to study the expected experimental b-jet charge identification performances using either constituent tracks information or exploiting the charge of a soft muon from  $B$ -hadron decays.

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