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## The anomalous $Zb\bar{b}$ couplings at the HERA and EIC

To resolve the long-standing discrepancy between the precision measurement of bottom quark forward-backward asymmetry at LEP/SLC and the Standard Model prediction, we propose a novel method to probe the  $Zb\bar{b}$  coupling by measuring the single-spin asymmetry  $A_e^b$  of the polarized lepton cross section in neutral current DIS processes with a  $b$ -tagged jet at HERA and EIC. Depending on the tagging efficiency of the final state  $b$ -jet, the measurement of  $A_e^b$  at HERA can already partially break the degeneracy found in the anomalous  $Zb\bar{b}$  coupling, as implied by the LEP and SLC precision electroweak data. In the first year run of the EIC, the measurement of  $A_e^b$  can already break the degeneracy, due to its much larger luminosity and higher electron beam polarization. With enough integrated luminosity collected at the EIC, it is possible to either verify or exclude the LEP data and resolve the  $A_{FB}^b$  puzzle.

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