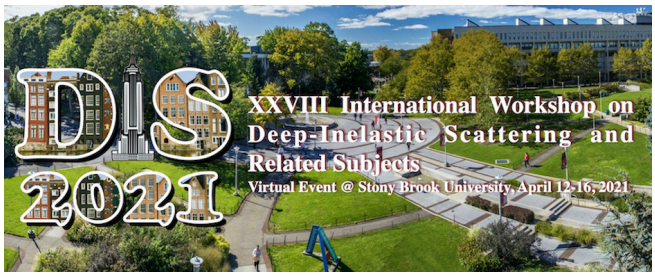

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Precision electroweak measurements at the LHeC and the FCC-eh

Thursday, 15 April 2021 13:27 (15 minutes)

The measurements of inclusive deep-inelastic electron-proton scattering (DIS) cross sections at high center-or-mass energies offer a unique opportunity for precision tests of electroweak interactions. In this talk we revisit electroweak effects in DIS and discuss the combined determination of parameters of electroweak theory together with parton distribution functions of the proton. Using simlulated data for the future DIS experiments LHeC and FCC-eh, we study the determination of the W, Z and top-quark mass from inclusive measurements. We will show the possibilities for the determination of the vector and axial couplings of light quarks, and outline a unique measurement of the running the effective weak mixing angle. The sensitivity of future inclusive DIS data to generic extensions of the electroweak standard model is further investigated.

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