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Precision measurement of the weak mixing angle at MESA

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MESA, the Mainz Energy-Recovering Superconducting Accelerator, will offer the possibility to measure the scattering of polarized electrons off protons at small energies ($E=155$ MeV) with very high precision. The parity-violating polarization asymmetry is determined by the weak charge of the proton and offers the possibility to measure the weak mixing angle with a relative precision of 0.13 %, competitive with past high-energy and upcoming LHC measurements. I will discuss challenges and the status of calculations of theoretical predictions for this measurement.

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