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Abstract for an Invited Paper
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Measurements of the weak neutral current with parity violating electron scattering¹

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In this talk I will highlight recent developments and future directions in probing electroweak and BSM physics via parity-violating electron scattering (PVES) at facilities such as Mainz, JLab and the upcoming EIC. Many of these PVES experiments measure the parity-violating asymmetry in the scattering of longitudinally polarized electrons from stationary targets in order to determine the weak mixing angle, $\sin^2\theta_w$, which has a definite prediction in the Standard Model. The EIC will provide the opportunity to perform such tests using polarized electrons in a collider. Deviations from the predicted value provide access to multi-TeV mass scales of new physics due to the extreme precision of the measured value. I will discuss weak mixing angle measurements via ep and ee scattering, presenting recent results and future prospects.

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