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Fundamental weak interaction studies with electron beams

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Sensitive tests of the standard model are possible through high precision determinations of the weak mixing angle using parity violation electron scattering. The precision which can be reached at very low Q^2 is comparable with the measurements obtained from LEP which are at present still the most precise determinations. Mass scales of new interactions up to 50 TeV are tested. The present status at the different experiments and the physics reach will be discussed. Parity violating electron scattering can in addition be employed for a variety of other topics like neutron skin measurements and others.

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