

## **A new parity violation experiment for a high precision determination of the weak mixing angle**

After a series of parity violating electron scattering experiments which explored the strangeness content of the nucleon, we plan on a new, improved parity violation experiment where we will measure the weak charge of the proton with a relative accuracy of 1.7%. This accuracy results in a measurement of the effective electroweak mixing angle  $\sin^2 \theta_W$  of 1.5 per mille, which is an important input parameter of the standard model. The target accuracy is comparable to measurements stemming from the Z-pole.

The new parity violation experiment will be able to test new physics beyond the standard model up to a scale  $\Lambda = 6,4 \text{ TeV}$ . The measurement will be performed at low beam energy with a momentum transfer  $q$  between 50 and 70 MeV, thus being sensitive to dark parity violating  $\eta$  Z-boson in this mass range.

The expected accuracy will be discussed and the experimental strategy will be presented.