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# The P2 experiment: A high precision determination of the weak mixing angle at low momentum transfer

*Wednesday, June 13, 2018 9:00 AM (30 minutes)*

The P2 experiment aims for a new, high precision determination of the weak mixing angle at low momentum transfer. The expected accuracy is around 0.15% which is comparable to the existing most precise measurements at the Z pole. The experimental method is the measurement of the parity violating asymmetry in the cross section of the elastic scattering of polarized electrons off unpolarized hydrogen. A number of innovative technologies had to be developed. The expected asymmetry is of the order of 30 parts per billion (ppb). This measurement will be carried out at the new electron accelerator MESA in Mainz. In this talk, the physics motivation for the experiment will be presented as well as the numerous experimental challenges associated with the measurement of such a small asymmetry. We will also show the current status of the work.

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