

Electromagnetic Properties of Neutrinos and the Weak Mixing Angle at the FPF

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The recent observation of collider neutrinos by the FASER collaboration highlights the potential the forward direction at the LHC has for neutrino physics. In the HL-LHC era, we expect a significant number of neutrinos of all flavors in the forward direction, opening the way for precision studies using collider neutrinos at the proposed Forward Physics Facility (FPF). In this talk, I will present some phenomenological studies of the electromagnetic properties of neutrinos, namely magnetic moment, milli-charge, and charge radius, that can be done at the FPF. Making use of this intense flux of neutrinos, FPF will be able to provide highly competitive and world leading bounds on these neutrino properties. Furthermore, the weak mixing angle can be measured to about 3% precision at the FLArE detector. The ability to measure the weak mixing angle with this high precision sets an important benchmark for the design of the FPF neutrino detectors.

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