

The Neutrino Magnetic Moment Portal

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We discuss neutrino magnetic moments as a way of constraining physics beyond the Standard Model. In fact, new physics at the TeV scale can easily generate observable neutrino magnetic moments - we discuss in particular possible connections to models aiming to solve the flavor anomalies. We then highlight the multitude of ways of probing neutrino magnetic moments, in particular using direct dark matter detection experiments (which are sensitive to neutrino magnetic moments because of the predicted modifications to the solar neutrino scattering rate), stellar cooling, and cosmological constraints from BBN and from the CMB. Looking into the future, we also mention possible constraints from a future Galactic supernova explosion, and from observations of high-energy astrophysical neutrinos.

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