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Nucleon electromagnetic form factors from twisted mass lattice QCD

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The electromagnetic form factors of the nucleon using twisted mass fermion configurations simulated by the ETM collaboration are presented. These include a gauge field ensemble simulated with two degenerate light quarks yielding a pion mass of around 130 MeV, as well as two ensembles yielding pion masses of 210 MeV and 370 MeV with additional strange and charm sea quarks tuned to their physical mass values. Details of the methods used and systematic errors are discussed, such as noise reduction techniques and the effect of excited state contamination.

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