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Strange Quark Magnetic Moment and Charge Radius of the Nucleon at Physical Point

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We present a lattice QCD calculation of the strange quark contribution to the proton's magnetic moment and the charge radius at the physical pion mass. The finite lattice spacing and finite volume corrections are included in a global fitting on three lattices with different lattice spacings, different volumes, and three sea quark masses. We obtain the strange magnetic moment $G_M^s(0) = -0.073(17) \mu_N$ and strange charge radius $\langle r_s^2 \rangle_E = -0.0047(22) \text{ fm}^2$. Additionally, we present our results of the disconnected u, d -quarks contribution to the proton's electromagnetic form factors.

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