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Electromagnetic form factor of single charm baryons in lattice QCD

We report a latest lattice QCD study of the electromagnetic form factors of Σ_c^0, Σ_c^{++} and Ω_c^0. Relevant physical quantities such as electric and
magnetic charge radii and magnetic moment are extracted. We also investigate the individual quark sector contributions to the charge
radii and the magnetic moments. This work employs three gauge ensembles generated by CLQCD collaboration with lattice spacings ranging from a $\approx$ 0.051fm to 0.101fm, establishing a solid foundation for continuum extrapolation. Given the flexibility in phenomenological model selection for form factor fitting, we employed the model-independent Z-expansion method. When updating the results of the charge radii, we noticed that $r^{2,l}_{E,M}/r^{2,s}_{E,M} \approx 1.5$. The charge radii reflects its internal structure, which may be a good measure of the degree of $SU(3)_f$ symmetry breaking in the charm baryons sector.

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