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Neutron-antineutron oscillations from Lattice QCD at the physical point

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Fundamental symmetry tests of baryon number violation in low-energy experiments can test beyond the Standard Model explanations of the matter-antimatter asymmetry of the universe.
Neutron-antineutron oscillations are predicted to be a signature of many baryogenesis mechanisms involving low-scale baryon number violation.
This work presents the first complete lattice quantum chromodynamics calculation of the six-quark matrix elements needed to connect experimental measurements of the neutron-antineutron oscillation time to constraints on beyond the Standard Model theories. Physical pion masses are used and non-perturbative renormalization is included.

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