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D-Meson Mixing in 2+1 Lattice QCD and Related Topics

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We present results for neutral D -meson mixing in 2+1-flavor lattice QCD.

We compute the matrix elements for all five operators that contribute to D mixing at short distances, including those that only arise beyond the Standard Model.

We present a detailed error breakdown for all sources of statistical and systematic uncertainty and the corresponding set of correlations among the matrix elements.

Our results have an uncertainty similar to those of the ETM Collaboration (with 2 and with 2+1+1 flavors).

This work shares many features with a recent publication on B mixing and with ongoing work on heavy-light decay constants from the Fermilab Lattice and MILC Collaborations, both of which will be briefly summarized.

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