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Controlling unwanted exponentials in lattice calculations of radiative leptonic decays

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Two important sources of systematic errors in lattice QCD calculations of radiative leptonic decays are unwanted exponentials in the sum over intermediate states and unwanted excited states created by the meson interpolating field. Performing the calculation using a 3d sequential propagator allows for better control over the systematic uncertainties from intermediate states, while using a 4d sequential propagator allows for better control over the systematic uncertainties from excited states. We calculate form factors using both methods and compare how reliably each controls these systematic errors. We also employ a hybrid approach involving global fits to data from both methods. I will present our results comparing these methods for both heavy and light mesons.

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