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Perturbative versus non-perturbative decoupling of heavy quarks

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We simulate a theory with N_f=2 heavy quarks of mass M. At energies much
smaller than M the heavy quarks decouple and the theory can be described
by an effective theory which is a pure gauge theory to leading order in 1/M. We present results for the mass
dependence of ratios such as t_0(M)/t_0(0). We compute these ratios from simulations and compare them to
the perturbative prediction. The latter relies on a factorization formula for the ratios which is valid to leading
order in 1/M in the low energy effective theory.

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