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Heavy Quarks in a Can and the QCD Coupling

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The Lambda parameter of three flavor QCD is obtained by computing the running of a renormalized finite volume coupling from hadronic to very high energies where connection with perturbation theory can safely be made. The theory of decoupling allows us to perform the bulk of the computation in pure gauge theory. The missing piece is then an accurate matching of a massive three flavor coupling with the pure gauge one, in the continuum limit of both theories. A big challenge is to control the simultaneous continuum and decoupling limits, especially when chiral symmetry is broken by the discretization.

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