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2-loop Quarkonium Hamiltonian (Non-annihilation Channel)

Monday 15 April 2024 18:00 (30 minutes)

We calculate the Hamiltonian of a heavy quarkonium system at two loops of
potential-NRQCD effective field theory (Non-annihilation channel).
We compute the quark-antiquark scattering amplitude in the non-annihilation
channel up to two loops in QCD, in the non-relativistic region in expansion in
beta. Then we match it to the scattering amplitude in potential-NRQCD.
We develop a method by combining threshold expansion and differential
equations for calculating the beta expansions of the master integrals.

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