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Relativistic corrections to the quark-anti-quark static potential with gradient flow

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We present lattice gauge theory results for $O(1/m)$ and $O(1/m^2)$ relativistic corrections to the static potential. These results are based on Wilson loops with two field strength insertions, which we renormalize using gradient flow. Moreover, we use tree-level improvement to reduce discretization errors in the Wilson loop at small temporal and spatial separation. We use computations for several values of the lattice spacing and the gradient flow time and present selected preliminary results of an extrapolation to the continuum and to zero flow time.

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