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Gradient Flow for Quark Mass Determination

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I propose a new method to determine quark mass using the vacuum expectation values (VEVs) of bilinear operators of the flowed quark field. This method allows for the determination of quark mass through a comparison of its perturbative calculation with its lattice data, where a precise measurement is expected, without gauge dependence or UV divergences. In this context, I present preliminary results of a two-loop perturbative calculation of these VEVs, analyzed in both large-mass and small-mass expansions.

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