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Static and non-static vector screening masses

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Thermal screening masses associated to the conserved vector current are calculated both in a weak-coupling and a lattice QCD approach. The inverse of a screening mass can be understood as the length scale over which an external electric field is screened in a QCD medium. The comparison of screening masses in the zero and non-zero Matsubara frequency sectors shows good agreement of the perturbative and the lattice results. Moreover, at $T \approx 508\text{MeV}$ the lightest screening mass lies above the free result ($2n\pi T$), in agreement with the $\mathcal{O}(g^2)$ weak-coupling prediction, whereas this was not the case in a previous study at $T \approx 254\text{MeV}$.

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