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Fermion spectral function in a highly occupied non-Abelian plasma

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Motivated by the quark-gluon plasma, we develop a simulation method to obtain the spectral function of fermions non-perturbatively in a non-Abelian gauge theory with large gluon occupation numbers. We apply our method to a non-Abelian plasma close to a far-from-equilibrium self-similar regime, and find very good agreement with perturbative hard loop (HTL) calculations for medium-induced masses, dispersion relations and quasiparticle residues. For the first time, we extract the full momentum dependence of the damping rate of fermionic collective excitations, and compare our results to recent non-perturbative extractions of gluonic spectral functions.

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