

Abstract Submitted
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Quark and Gluon Collective Modes with Momentum Anisotropy

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— The Self-energies and dispersion relations of the quark and gluon collective excitations are modified by medium effects in a hot and momentum anisotropic quark-gluon plasma. This can affect various observables of the heavy-ion collision experiments and provide information about earlier stages of the quark-gluon plasma evolution. We calculate the hard loop self-energies and dispersion relations of the collective excitations for both of the quark and gluon modes with various types and strengths of momentum anisotropy. We show the full direction dependence of the effective masses and unstable modes of the quark and gluon quasiparticles.

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