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Relaxation dynamics of chiral transports and spin polarization in Quark-Gluon Plasma

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We study relaxation dynamics of chiral transport phenomena and spin polarization in Quark-Gluon Plasma in both weakly and strongly coupled regimes. These relaxation dynamics determine the important dynamical time scale for achieving equilibrium spin-polarization of quasi-particles in the presence of magnetic field and fluid vorticity, which are time-dependent in heavy-ion collisions. This is also important in the time-dependence of the Chiral Vortical Effect. Our results should be crucial in a reliable quantitative study of Λ baryon polarization in off-central heavy-ion collisions.

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