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## Elliptic flow splittings in the Polyakov–Nambu–Jona-Lasinio transport model

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To incorporate the effect of gluons on the evolution dynamics of the quark matter produced in relativistic heavy-ion collisions, we extend the three-flavor Nambu–Jona-Lasinio (NJL) transport model to include the contribution from the Polyakov loops. Imbedding the resulting pNJL partonic transport model in an extended multiphase transport (extended AMPT) model, we then study the elliptic flow splittings between particles and their antiparticles in relativistic heavy-ion collisions at beam energy scan energies. We find that a weak quark vector interaction in the partonic phase is able to describe the elliptic flow splitting between protons and antiprotons in heavy-ion collisions at  $\sqrt{s_{NN}} = 7.7$  to 39 GeV. Knowledge of the quark vector interaction is useful for understanding the equation of state of quark matter at large baryon chemical potentials and thus the location of the critical point in the QCD phase diagram.

### Category

Theory

### Collaboration (if applicable)

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