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Speed of Sound in Dense Matter

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Gravitational waves offer exciting opportunities to study bulk properties of dense matter and challenge theoretical models of dense equations of state (EoS). NJL-type models widely employed in the COMPOSE database for studying neutron stars have the known problem that the speed of sound fails to approach the conformal limit. We investigate how a dynamical chiral quark model, which implements non-local interactions among quarks resolves the issue. Additionally, the influence of diquark on the QCD phase diagram is also investigated.

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