

Gravitational waves from the quark-hadron phase transition

Wednesday, October 9, 2024 10:02 AM (12 minutes)

It is believed that de-confined quark matter is more energetically stable than hadronic matter at extreme densities, such as those occurring in neutron stars. We thus believe that an explosive phase transition between hadronic and quark matter can occur in neutron star cores. Past studies have shown that the interface between hadronic and quark matter can develop wrinkles as the phase transition proceeds outward from the core. These wrinkles could cause gravitational wave emission. This project aims to model that gravitational wave signal using full general relativity.

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