

## Exploring physics of neutron star matter with gravitational waves from neutron star merger



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### Abstract:

Neutron stars provide us a unique laboratory for studying the physics of nuclear/hadronic matter. In particular, a merger event of binary neutron stars can be regarded as a cosmological collider experiment. With this regard, there are a number of theoretical studies of constraining the equation of state of neutron star matter using gravitational wave (GW) from neutron star mergers. Then, In the spectacular event of GW170817, information of the equation of state are extracted from GW. The theoretical basis and recent progress, as well as future prospects of this research field will be presented and discussed.