

ROCKSTAR: Towards a Roadmap of the Crucial measurements of Key observables in Strangeness reactions for neutron sTARs equation of state

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Probing hyperons in Neutron Stars using Multimessenger data

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Terrestrial experiments, particularly heavy-ion collision experiments, suggest the appearance of strangeness containing particles, such as hyperons, in dense matter. The ultrahigh density core of Neutron Stars is the ideal environment to search for strange matter. Over the past decade, astrophysical observations of Neutron Stars across multiple wavelengths of the electromagnetic spectrum have improved our understanding of hyperons. However the recent direct detection of gravitational waves from binary Neutron Star mergers opened up a new window to look for signatures of hyperons. In this talk, I will highlight recent works in which combined data from nuclear and hypernuclear physics, heavy-ion physics as well as multimessenger astrophysical data from Neutron Stars provide important insights into the behaviour of hyperons in dense matter.

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