

The Structure and Signals of Neutron Stars, from Birth to Death



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Neutron stars and nuclear matter parameters

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Neutron stars can be suitable laboratory to see the physics under the ultra-high density region. The direct observations of neutron stars help us to understand the nuclear matter properties and equation of state. On the other hand, the terrestrial nuclear experiments directly reveal such properties especially around the saturation density, which are strongly coupled with not only the crust region in the neutron stars but also the stellar structure of low-mass neutron stars. In this talk, we show the possibility to derive the nuclear properties from the astrophysical observational point of view. In particular, we focus on the nuclear symmetry energy, adopting the observation of quasi-periodic oscillations of giant flares in soft-gamma repeaters. In addition to showing of our results, we will discuss the additional effect to take into account in future.

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