

Seminario, Quarta 21/09/2022 16:00h

Local: Evento à distância, será transmitido pelo Zoom através do link  
[https://us02web.zoom.us/j/82228892557?](https://us02web.zoom.us/j/82228892557?pwd=NEd5R3VJWXBaZXkyMXl1dC9vWTd1UT09)  
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Title: Going beyond a Galactic Supernova to Hunt for new physics : the DSNB

The Universe is awash with tens-of-MeV neutrinos of all species coming from all past core-collapse supernovae, also known as the diffuse supernova neutrino background (DSNB). Detecting the DSNB would open up new avenues in multi-messenger astronomy. In particular, it offers the unique opportunity to probe properties of the cosmos using neutrinos, as opposed to photons. The Super-Kamiokande experiment, loaded with gadolinium, is expected to collect dozens of events from the DSNB in the next decade. Future detectors such as Hyper-Kamiokande and Theia will perform even better, collecting hundreds of events after a decade of data-taking. In this talk, I will discuss how a future detection of the DSNB can be used to inform various research topics in cosmology, astrophysics and particle physics, focusing on a few examples from each field.