

Seminário, Terça-feira 30/08/2022 16:00h

Local: Evento à distância, será transmitido pelo Zoom através do link

<https://us06web.zoom.us/j/82296991938?pwd=NXJ3R2ozL3Y0VURybDRwZWVvc0JpQT09>

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Title: Neutrino Non-Standard Interactions via Light Scalars

Non-standard interactions (NSI) of neutrinos with matter mediated by a scalar field would induce medium-dependent neutrino masses which can modify oscillation probabilities. Generating observable effects requires an ultra-light scalar mediator. I'll talk about general results for the scalar NSI using techniques of quantum field theory at finite density and temperature, including the long-range force effects, and discuss various limiting cases applicable to the neutrino propagation in different media, such as the Earth, Sun, supernovae, and early universe. By combining all the constraints on the NSI parameters, it is shown that observable scalar NSI effects, although precluded in terrestrial experiments, are still possible in future solar and supernovae neutrino data.