Contribution ID: **272** Type: **Poster session only**

Sterile neutrinos with inverse seesaw and the simplest flavour symmetries

We study the phenomenology of the minimal inverse-seesaw model composed of two 'right-handed neutrinos' and two sterile singlet fermions, besides the Standard Model (SM) particle content. The model is supplemented with Abelian flavour symmetries to ensure maximal predictability and establish the most restrictive flavour patterns which can be realised by those symmetries. This setup requires the addition of a second scalar doublet and two complex scalar singlets to the SM enabling us to implement spontaneous CP violation. Such CP-violating effects can be successfully communicated to the lepton sector by means of the scalar singlets couplings with the new sterile fermions. The Majorana and Dirac CP phases are correlated, and the active-sterile neutrino mixing is fully determined by the active neutrino masses, mixing angles and CP phases. We investigate the constraints imposed on the model by the current experimental limits as well as future projected sensitivities on charged lepton flavour-violating decays and searches sensitive to the presence of heavy sterile neutrinos.

arXiv number (if applicable)

2012.04557

Primary author: Mr FERNANDES DE NORONHA BRITO CÂMARA, Henrique Pedro (Centro de Física Teórica de Partículas' (CFTP))

Presenter: Mr FERNANDES DE NORONHA BRITO CÂMARA, Henrique Pedro (Centro de Física Teórica de Partículas' (CFTP))

Session Classification: Poster Session