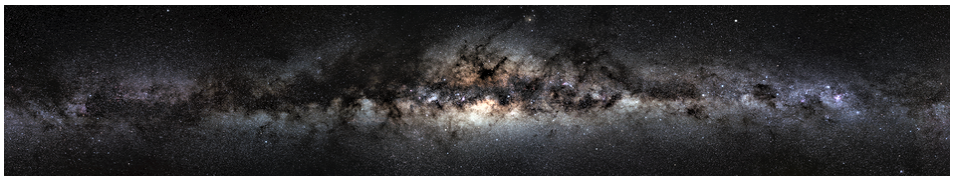

Contribution ID: **103** Type: **Poster**

Long Baseline Oscillation Probability Approximation in a Model for Light Sterile Neutrinos.

Tuesday, 7 December 2021 08:20 (30 minutes)

An abundance of hints from recent neutrino experiments leads to the hypothesis of the existence of light sterile neutrinos; however, there are also many constraints from laboratory experiments experimentally and cosmological observations that constrain its mixing and mass. In light of these observations, we present a new model of light sterile neutrinos that aims to elucidate this confusing situation. The model starts from the generation of sterile neutrino by a scalar field — in analogy to the Higgs in the Standard Model — and the generation of its mass by an effective See-Saw mechanism. Under this "3+1" model, we work out a numerical approximation scheme for the oscillation probability of neutrino propagation in matter. Due to the cosmological constraints that disfavor the existence of sterile neutrinos at the 1eV energy scale, we are also investigating the reconciliation of bounds from Hubble parameter values in BBN and CMB measurements.

Primary authors: WAGNER, Carlos E.M.; JIN, Miaochen (Harvard University); SEVERINO, Paul; LI, Xueqi

Presenter: JIN, Miaochen (Harvard University)

Session Classification: Break and Poster Session