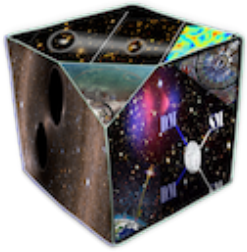

Contribution ID: **11** Type: **Poster on neutrinos**

Neutrino mass via fermion kinetic mixing; Scotogenic model in the context of SU(7) GUT; Neutrino mass and $R_{(K*)}$ and $R_{(D*)}$ anomalies via R_2 and S_3 leptoquarks

Thursday, 23 August 2018 15:15 (5 minutes)

I will talk on 1 of the following:

1) Generating neutrino mass via fermion kinetic mixing. I this work we show how neutrino masses can be obtained from the radiative fermion mixing of 2 or more dark fermions and what kind of consequences and signatures this scenario can have compared to other similar models of neutrino mass.

2) I this work we demonstrate how Scotogenic neutrino mass generation can be embedded in $SU(7)$ GUT with different possible phenomenology and signatures. In this scenario we have a low energy Pati-Salam like,$SU(4)_c \times SU(2)_L \times U(1)_R$, symmetry. We also show how the $SU(7)$ symmetry and subsequent symmetries can be broken down to SM, as well as investigate possible dark symmetries needed for Scotogenic scenario.

3) Here we focus on explaining $R_{(K*)}$ and $R_{(D*)}$ anomalies via $R_2 \sim (3, 2, 7/6)$ and $S_3 \sim (\bar{3}, 3, 1/3)$ leptoquarks as well as simultaneously generating neutrino mass. We show that non of these leptoquarks can accommodate these anomalies alone and both are needed for simultaneous solution of $R_{(K*)}$ and $R_{(D*)}$ anomalies and neutrino mass generation. We study constraints and signatures of this model.

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