

KEK Theory Meeting on Particle Physics Phenomenology (KEK-PH2018 winter) and 3rd KIAS-NCTS-KEK workshop on Particle Physics Phenomenology

Contribution ID: 54

Type: **not specified**

Phenomenology in the model with parity symmetry

Wednesday, 5 December 2018 16:15 (15 minutes)

We construct an extended Standard Model (SM), motivated by the strong CP problem and the dark matter. In our model, the parity symmetry is conserved, introducing the extra gauge symmetry, $SU(2)_R \times U(1)_R$. The charges of $SU(2)_R \times U(1)_R$ are assigned to the mirror fields in the same way as in the SM, but the chirality of the extra fermions is opposite to respect the parity symmetry. The mirror quarks are also charged under the $SU(3)_c$ in the SM, so that the strong CP problem is resolved. In this setup, the gauge symmetry in the mirror leads stable particles like proton and electron. In order to avoid the stable colored particle, we introduce some scalars that also become stable because of the gauge symmetry. In this talk, we discuss the dark matter (DM) physics assuming the lightest scalar is DM.

Presenter: OMURA, Yuji (KMI, Nagoya Univ.)

Session Classification: Parallel Session 2