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## On the common origin of flavour hierarchies and strong CP

We propose a class of models based on the parity invariant Left-Right Symmetric Model (LRSM) which incorporates the mechanism of radiative generation of fermion masses while simultaneously possessing the solution to the Strong CP problem. A flavour non-universal gauged abelian symmetry is imposed on top of LRSM, which helps in inducing the masses of second and first-generation fermions at one-loop and two-loop, respectively, and thereby reproduces the hierarchical spectrum of the masses. Parity invariance sets the strong CP parameter vanishing at the zeroth order and the non-zero contribution arises at the two-loop level which is in agreement with the experimental constraints. The minimal model predicts flavour symmetry breaking scale and the  $SU(2)_R$  symmetry breaking scale at the same level. Flavor non-universality of the new gauge interaction leads to various flavour-changing transitions both at quarks and leptonic sectors and, therefore, has various phenomenologically interesting signatures. The model predicts a new physics scale near  $10^8$  GeV or above for phenomenological consistent solutions.

### Field of contribution

Phenomenology

**Author:** MOHANTA, GURUCHARAN (Physical Research Laboratory, Ahmedabad, India)

**Presenter:** MOHANTA, GURUCHARAN (Physical Research Laboratory, Ahmedabad, India)

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