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Phenomenological aspects of the fermion and scalar sectors of a S_4 flavored 3-3-1 model

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We propose a predictive model based on the $SU(3)_C \times SU(3)_L \times U(1)_X \times U(1)_{Lg}$ gauge symmetry, supplemented by the S_4 family symmetry and auxiliary cyclic symmetries whose spontaneous breaking produces the observed SM fermion mass and mixing pattern. The masses of the neutrinos are produced by an inverse seesaw mechanism mediated by the right-handed Majorana neutrinos. Our proposed model successfully accommodates the experimental values of the SM fermion mass and mixing parameters as well as the Higgs di-photon decay rate.

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