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The S3 flavour symmetry: quarks, leptons and Higgs sectors

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We present a brief overview of the minimal S3 invariant extension of the Standard Model in which the concept of flavour is extended to the Higgs sector by introducing in the theory three Higgs fields which are SU(2) doublets. The mass matrices of quarks and leptons are reparametrized in terms of their eigenvalues, thus allowing to express all entries in the mixing matrices, V_CKM and U_PMNS, in terms of mass ratios, and from a numerical analysis, in excellent agreement with the most recent experimental data. In the leptonic sector the S3xZ2 symmetry implies a non-vanishing ans sizeable reactor mixing angle, theta_13 ˜ 9.2deg, in very good agreement with experimental data.

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