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Lepton-flavour violation in a Pati-Salam model with gauged flavour symmetry

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Combining Pati-Salam (PS) and flavour symmetries in a renormalisable setup, we devise a scenario which produces realistic masses for the charged leptons. Flavour-symmetry breaking scalar fields in the adjoint representations of the PS gauge group are responsible for generating different flavour structures for up- and down-type quarks as well as for leptons. The model is characterised by new heavy fermions which mix with the Standard Model quarks and leptons. In particular, the partners for the third fermion generation induce sizeable sources of flavour violation. Focusing on the charged-lepton sector, we scrutinise the model with respect to its implications for lepton-flavour violating processes such as $\mu \rightarrow e\gamma$, $\mu \rightarrow 3e$ and muon conversion in nuclei.

Primary authors: LUHN, Christof (Theoretische Physik 1, University of Siegen); MOCH, Paul (Theoretische Physik 1, University of Siegen); FELDMANN, Thorsten (Theoretische Physik 1, University of Siegen)

Presenter: MOCH, Paul (Theoretische Physik 1, University of Siegen)

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