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Lepton universality in K decays

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In the Standard Model minimally extended by sterile neutrinos, modified W - l - ν couplings arise and induce a tree-level enhancement to lepton flavour universality violation in light mesons. Indeed the additional mixing between the active neutrinos and the sterile ones can generate deviations from unitarity in the leptonic mixing matrix for charged currents. We recently reconsidered this idea in the context of the inverse seesaw and its impact on the well measured ratios R_K and R_{π} . This work (arxiv:1211.3052) shows that the current experimental bound can be saturated while agreeing with the different experimental and observational constraints. I would also present recent results we obtained by applying this idea to other mesons decays with the aim to test the existence of sterile neutrinos to a further extent.

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