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Flavor hierarchies, flavor anomalies, and the Higgs mass from a warped extra dimension

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In recent years a series of anomalies hinting at lepton flavor universality violation in B-meson decays have emerged. Interestingly, these anomalies can be coherently explained at the TeV scale by "4321" gauge models with hierarchical couplings reminiscent of the Standard Model (SM) Yukawas. This provides a tantalizing hint of new physics connected to the SM flavor puzzle at the same scale where the electroweak (EW) hierarchy problem is expected to be resolved. We show that 4321 models can arise as the low-energy limit of a complete theory of flavor, based on a warped fifth dimension where each Standard Model family is quasi-localized in a different brane. The SM Higgs is identified as a pseudo-Nambu-Goldstone boson emerging from the same dynamics responsible for breaking 4321 gauge symmetry. This novel construction unifies quarks and leptons in a flavor non-universal manner, provides a natural description of flavor hierarchies, and addresses the EW hierarchy problem a la Randall-Sundrum.

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