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A Solution to the Flavor Problem of Warped Extra Dimensions

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Extensions of the Standard Model (SM) featuring warped extra dimensions (Randall-Sundrum models) have a build-in protection mechanism, called RS-GIM, which prevents the occurrence of large flavor changing neutral currents. This mechanism is extremely successful and brings the RS model into agreement with a new physics scale of a few TeV in almost all flavor sectors. The single exception is CP violation in K-Kbar mixing, which receives excessive contributions from mixed-chirality operators absent in the SM. This is the so-called flavor problem of warped extra dimensions. We have recently shown that an extension of the strong interaction bulk gauge group can cancel these contributions to first order in the new-physics scale, so that the extended RS model represents a consistent theory of flavor at the TeV scale.

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