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Simple and Realistic Composite Higgs Models in Flat Extra Dimensions

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We construct new composite Higgs/gauge-Higgs unification (GHU) models in flat space that overcome all the difficulties found in the past in attempting to construct models of this sort. The key ingredient is the introduction of large boundary kinetic terms for gauge (and fermion) fields. We focus our analysis on the electroweak symmetry breaking pattern and the electroweak precision tests and show how both are compatible with each other. Our models can be seen as effective TeV descriptions of analogue warped models. We point out that, as far as electroweak TeV scale physics is concerned, one can rely on simple and more flexible flat space models rather than considering their unavoidably more complicated warped space counterparts. The generic collider signatures of our models are essentially undistinguishable from those expected from composite Higgs/warped GHU models, namely a light Higgs, colored fermion resonances below the TeV scale and sizable deviations to the Higgs and top coupling.

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