

Chiral low-energy physics from squashed branes in deformed N=4 SYM

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We discuss the low-energy physics which arises on stacks of squashed brane solutions of $SU(M)$ N=4 SYM, deformed by a cubic soft SUSY breaking potential. A brane configuration is found which leads to a low-energy physics similar to the standard model in the broken phase, assuming suitable VEV's of the scalar zero modes. Due to the triple self-intersection of the (fuzzy) branes, the matter content includes that of the MSSM with precisely 3 generations and right-handed neutrinos. No exotic quantum numbers arise, however there are extra chiral superfields with the quantum numbers of the Higgs doublets, the W, Z, e_R and u_R , whose fate depends on the details of the rich Higgs sector. The chiral low-energy sector is complemented by a heavy mirror sector with the opposite chiralities, as well as super-massive Kaluza-Klein towers completing the N=4 multiplets. The sectors are protected by two gauged global $U(1)$ symmetries. Analogous solutions arise in the deformed IIB matrix model.

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