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U(3) x Sp(1) x U(1) x U(1)

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The invariant mass distribution of dijets produced in association with W bosons, recently observed by the CDF Collaboration at Tevatron, reveals an excess in the dijet mass range 120-160 GeV/c^2, 4.1 \sigma beyond Standard Model expectations. We show that such an excess is a generic feature of low mass string theory, due to the production and decay of a hadrophillic Z', a singlet partner of SU(3) gluons coupled primarily to the U(1) baryon number. In this framework, U(1) and SU(3) appear as subgroups of U(3) associated with open strings ending on a stack of 3 D-branes. In addition, our minimal model contains three other stacks of D-branes to accommodate the electroweak Sp(1) and the hypercharge which is a linear combination of the U(1) tied to the color stack and two additional U(1) fields living in the lepton D-brane and the right D-brane. For a given Z' mass, the model is quite constrained. Its free parameters are just sufficient to simultaneously ensure: a small Z-Z' mixing in accord with the stringent LEP data on the Z mass; very small (less than 1%) branching ratio into leptons; and a large hierarchy between Z" and Z' masses. The heavier neutral gauge boson Z" is within the reach of LHC.

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