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Explaining the Tevatron Forward-Backward asymmetry with a W' ?

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We investigate if the Tevatron Forward-Backward asymmetry can be explained by T-channel exchange of a W' gauge boson coupling to down and top quarks.

In a gauge theory UV completion of such a model, the W' is accompanied by a Z' at a similar mass scale, which is strongly constrained. Null results from searches for

dijet and dilepton resonances at the Tevatron are especially restrictive, and combined

implying large mass splitting between the W' and Z' .

We argue that such a splitting can only be accomplished if the gauge symmetry is broken by

a scalar in a large dimension representation of the gauge group, for which no perturbative description exists.

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