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## **Tevatron Top A\_FB Versus LHC Top Physics**

Monday, 29 August 2011 15:00 (25 minutes)

We carry out a comprehensive analysis of models for top A\_FB at the Tevatron in light of new top data arriving from the LHC. We begin with a careful Tevatron analysis, considering in general which sets of effective vertices give rise to a large forward-backward asymmetry while suppressing the contribution to the total ttbar crosssection. We show on general grounds that scalar models struggle to produce sufficient asymmetries, while vector models can produce a large asymmetry with a less significant tension in the total cross-section and ttbar invariant mass distribution at the Tevatron. We examine the essential observables of these models for top physics at LHC7 with 1 fb^-1 of data, including the total cross-section, invariant mass distribution and number of additional jets in ttbar events. In the case of t-channel mediators, the LHC total cross-section places a strong constraint on light mediators, while the Tevatron invariant mass distributions place strong constraints on heavy mediators that are able to produce the asymmetry. Vanilla t-channel models thus seem disfavored at present. Heavy axigluons are becoming increasingly squeezed by LHC7

ttbar and dijet resonance searches. We conclude that LHC7 top analyses are rapidly closing the window for viable models of Tevatron A\_FB.

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