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Finding Light Stops with Fat Jets

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Abstract:

We argue that stops between 300-600 GeV can be discovered with 2011 LHC data if they decay into top quarks and light neutral particles. Events with a fully hadronic top/anti-top pair and a pair of invisible decay products can be identified with the top-tagging of a fat jet, a single b-tag, a missing transverse energy cut, as well as other kinematic cuts to reduce backgrounds with real top quarks in them. Such cuts obliterate the background suggesting discovery can be made with a handful of events.

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