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Search for Color Sextet Scalars in Early LHC Experiments

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We explore the potential for discovery of an exotic color sextet scalar in same sign top quark pair production in early running at the LHC. We present the first phenomenological analysis at collider energies of a color sextet scalar with full top quark spin correlations included. We demonstrate that one can measure the scalar mass, the top quark polarization, and confirm the scalar resonance with 1 fb-1 of integrated luminosity. The top quark polarization can distinguish gauge triplet and singlet scalars.

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