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Search for direct top squark pair production in events with two tau leptons with the ATLAS detector

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A search for direct pair production of the supersymmetric partner of the top quark in events with two tau leptons has been performed using proton-proton collision data. The 20 fb^{-1} of $\sqrt{s} = 8 \text{ TeV}$ data were collected in 2012 by the ATLAS experiment at the LHC. The search is optimised for a model where both top squarks decay via a scalar tau to a nearly massless gravitino. No significant excesses from the Standard Model expectations are found. Exclusion limits at the 95% confidence level are set as a function of the top squark and scalar tau masses. Depending on the scalar tau mass, lower limits between 490 GeV and 650 GeV are placed on the top squark mass within the model considered.

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