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Search for signatures of Littlest Higgs with T-parity dijet final states with the ATLAS detector MARIJUS BRAZICKAS, Cal State Univ-Fresno, ATLAS, CERN COLLABORATION — *The Littlest Higgs model with T-parity* (LHT) is an extension of the Standard Model (SM) at TeV scale. LHT model offers a solution to the naturalness problem of the SM by introducing a set of new TeV-scale particles: T-odd heavy gauge bosons and T-odd heavy quarks that can be produced only in pairs. Under the new symmetry of LHT, due to the implemented parity, all SM fermions and gauge bosons are T-even, while their new heavy partners are T-odd. Besides the heavy T-odd fermion sector LHT introduces a T-even heavy top quark, a partner of T-odd heavy quark, which can mix with a SM top quark. In addition, LHT model predicts a colorless, lightest T-odd stable particle (LTP), a heavy photon (A_H), which is a potential candidate for cold dark matter. We are performing a search for effects from the LHT in dijet final states. The analysis involves performing simulations of Higgs events within the ATLAS framework. We are generating Littlest Higgs events with p-p collisions at 14 TeV CM energy using a CalcHep event generator. Validations of generated event samples have been done by analyzing the kinematics of jets in the final states. Following simulation and reconstruction of these validated samples with the ATLAS detector, I will present the expected sensitivity.

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