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Particle Assignment in the ttH Production Channel of the Higgs Boson[1] EMMA MOLDEN, University of Illinois at Urbana-Champaign, NEUBAUER TEAM — Even though the Large Hadron Collider has been shut down for improvements since February 2013, there is still an abundance of data to investigate. We focused on looking for the Higgs boson in a production channel where it is produced in association with two top quarks. When searching for the Higgs boson in a collision it is necessary to reconstruct the mass of the Higgs boson to improve the signal-to-noise ratio, which requires correct particle assignment. I present a method of particle assignment for the ttH production channel, used on simulated data from the ATLAS detector. This production channel could reveal information about this newly-discovered particle that has potential to open new doors in the search for new physics beyond our current understanding.

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