Search for the Higgs Particle and Electron ID Using H-Matrix at ATLAS HYEON JIN KIM, JAEHOON YU, University of Texas at Arlington, UTA HEP TEAM — A good final state for the search for the Standard Model Higgs involves the decay of the Higgs particle to two Z bosons which then subsequently decays to electrons, resulting in four electrons when the mass of the Higgs is greater than 130GeV/c2. In order to increase the efficiency of selecting the Higgs particles, it is critical to develop a high efficiency electron identification tool. In this talk, we present the electron identification algorithm based on the covariant matrix technique which was successfully used in the D0 experiment at the Tevatron. We will then present the performance of the currently developed 5 and 10 dimensional covariant matrices for electrons and photons have been constructed with a set of variables describing the electron and photon shower shape. Good event selection efficiency for H $\Diamond$ 4e and H $\Diamond$ $\gamma\gamma$ final states have been observed.

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