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Observation of Z->tau tau Decays with the ATLAS detector

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A study of Z -> tau tau decays has been performed with the ATLAS experiment at the LHC. The channel with one tau lepton decaying into an electron or muon and the second one into hadrons has been analyzed. The study is based on a data sample corresponding to an integrated luminosity of 8.3 pb-1 for the electron channel and 8.5 pb-1 for the muon channel, at a proton-proton centre-of-mass energy of 7 TeV. In the muon channel a total of 51 data events is selected, with an overall estimated background of 9.9 ± 2.1 events. In the electron channel a total of 29 data events is selected, with an estimated background of 11.8 ± 1.7 events. The observed number of events in data is compatible with the Standard Model expectation. This is the first observation of Z -> tau tau decays in ATLAS.

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