

# **Search for the standard model Higgs boson produced in association with a vector boson and decaying into a tau pair in pp collisions at $\sqrt{s}=8$ TeV with the ATLAS detector**

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## **Abstract**

A search for the standard model Higgs boson produced in association with a vector boson with the decay  $H \rightarrow \tau\tau$  is presented. The data correspond to  $20.3 \text{ fb}^{-1}$  of integrated luminosity from proton-proton collisions at  $\sqrt{s}=8$  TeV recorded by the ATLAS experiment at the LHC during 2012. The data agree with the background expectation, and 95% confidence-level upper limits are placed on the cross section of this process. The observed (expected) limit, expressed in terms of the signal strength  $\mu=\sigma/\sigma_{\text{SM}}$  for  $m_H=125$  GeV, is  $\mu<5.6$  (3.7). The measured value of the signal strength is  $\mu=2.3\pm 1.6$ .