



**HEP 2013
Stockholm
18-24 July 2013**



Contribution ID: 784

Type: **Poster Presentation**

Studies of Higgs spin and parity with the ATLAS detector at the LHC

Studies of the spin and parity quantum numbers of the Higgs boson candidate are presented. They are based on pp collision data collected by the ATLAS experiment at the LHC. The Standard Model spin-parity $J^P = 0^+$ hypothesis is confronted with alternative models using the kinematic properties of the Higgs boson decays into $H \rightarrow \gamma\gamma$, $H \rightarrow WW^* \rightarrow l\nu l\nu$ and $H \rightarrow ZZ^* \rightarrow 4l$ final states, and their combinations. The datasets used correspond to integrate luminosity of 20.7 fb^{-1} collected at $\sqrt{s} = 8 \text{ TeV}$, and for the $H \rightarrow ZZ^*$ channel an additional dataset corresponding to an integrated luminosity of 4.8 fb^{-1} at $\sqrt{s} = 7 \text{ TeV}$ is added.

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Track Classification: Higgs and New Physics