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## Signal selection efficiency and mass resolution in the $H \rightarrow ZZ^* \rightarrow 4l$ decay channel with the ATLAS detector

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Following the recent discovery, the ATLAS collaboration is performing detailed studies on the properties of the new boson. An important ingredient for these studies is the signal selection efficiency, which is studied using a Tag-and-Probe method applied on  $20.7 \text{ fb}^{-1}$  of  $Z \rightarrow \mu\mu$  and  $Z \rightarrow ee$  data recorded by the ATLAS detector at  $\sqrt{s}=8\text{TeV}$ . Also, a technique to improve the signal mass resolution is presented, which is used to estimate the mass of the new particle.

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