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## **Novel Techniques to improve the Invariant Dijet Mass Reconstruction in the Standard Model Higgs boson resonance search $H \rightarrow b\bar{b}$ in association with a W/Z boson using the ATLAS detector**

*Tuesday 8 April 2014 17:00 (15 minutes)*

An updated direct search for a Standard Model Higgs boson decaying into pairs of  $b$  quarks in association with a W or Z boson using the ATLAS detector at the LHC is presented. The search is performed in the three decay modes  $ZH \rightarrow \nu\nu b\bar{b}$ ,  $WH \rightarrow \ell\nu b\bar{b}$  and  $ZH \rightarrow \ell\ell b\bar{b}$  with  $\ell$  denoting either electrons or muons and has to cope with overwhelming backgrounds from the dijet production expected from QCD interactions. Final state radiation and reconstruction effects may decrease the  $b\bar{b}$  resonance resolution significantly while comparably decreasing the probability of observing the decay over the background. This talk presents the development and evaluation of advanced techniques to improve the invariant dijet mass reconstruction.

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