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Search for Decays of the Higgs Boson into a Z Boson and a Light Hadronically Decaying Resonance

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A search is presented for decays of the Higgs boson to a Z boson and a hadronically decaying light resonance, h->ZX->ll+hadrons, using the Run 2 dataset of the ATLAS detector at the LHC. Due to its low mass and high boost, the resonance is reconstructed as a single jet of hadrons. A boosted decision tree is used to suppress the large multijet background. Beyond its potential for new physics, this final state is a potential probe of the charm quark Yukawa coupling and the low Q^2 behaviour of H->ZZ* decays.

Presenter: REYNOLDS, Elliot (University of Birmingham (GB))

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