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Determination of Higgs boson properties and searches for new resonances using highly boosted objects with the ATLAS experiment

Detailed measurements of Higgs boson properties and its interactions can be performed using highly boosted objects, where the detector signatures of two or more decay products overlap. The talk will present several ATLAS analyses targeting these topologies, using collision data collected during Run 2 of the LHC. The talk will present studies of the properties of Higgs boson production at high transverse momentum, where the Higgs boson and associated states such as a weak vector boson or a top quark-antiquark pair are reconstructed as boosted jets. The presentation will also highlight tests of the CP nature of Higgs boson interactions in these topologies. Finally, the talk will present searches for new high-mass Higgs-like resonances decaying into highly boosted Z bosons producing merged di-electron final states.

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