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Search for Dark Matter in Invisible Higgs Decays with the ATLAS experiment

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The nature of dark matter is still unknown and it is one of the key questions in particle physics. Many beyond the Standard Model theories predict the production of dark matter particles in the decays of the Higgs boson. As dark matter particles do not interact with the detector, they would be invisible to the detector and can only be probed using the presence of missing transverse momentum.

With full Run-2 data, the ATLAS experiment has performed six independent searches for dark matter in the invisible decays of the Higgs boson, each focusing on a different production mechanism and the final state. In this poster, I will present the results from the combination of these searches.

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