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## Searches for heavy resonances (including new scalars & BSM Higgs decays)

*Tuesday 8 July 2025 09:00 (15 minutes)*

Though the Standard Model (SM) of particle physics has been a very successful theory in explaining a wide range of measurements, there are still many questions left unanswered such as incorporation of gravity into SM, neutrino masses, matter-antimatter asymmetry, supersymmetry, or existence of dark matter candidates. One of the possible solutions to address these challenges is the extension of the SM with the presence of additional, heavy BSM particles; including scalar (H/S), pseudoscalar (A), or charged (H<sup>+-</sup>/H<sup>++-</sup>) BSM Higgs bosons. This is accounted for in multiple possible new physics models predicting the existence of these new, heavy particles. This talk summarises recent ATLAS searches for Beyond-the-Standard-Model heavy resonances, using the full Run 2 dataset.

### Secondary track

**Authors:** COLLABORATION, ATLAS; BAHMANI, Marzieh (Humboldt university of Berlin)

**Presenter:** BAHMANI, Marzieh (Humboldt university of Berlin)

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