

ATLAS search for ALPs that decay into diphoton in Run 3

Friday 19 July 2024 20:45 (15 minutes)

An ATLAS search for axion like particles (ALPs) that decay into diphoton is presented. ALPs are hypothetical light particles that may be a component of a hidden (dark) dark sector. ALPs arising from Higgs decays are studied, where the Higgs is produced in association with a Z boson that is reconstructed leptonically. For prompt ALP decays, a dedicated search looking for two leptons and two collimated photons (merged or resolved) has been published. Studies focusing on the case where ALPs are long lived and mostly decay within the calorimeter volume, are on-going. In this case, photons are displaced photons and must be identified through dedicated tools. In this poster, current and prospective results on these ALPs searches will be presented.

Alternate track

I read the instructions above

Yes

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Session Classification: Poster Session 2

Track Classification: 09. Dark Matter Detection