

New Physics Search Highlights and Summary

Friday, 31 October 2025 11:30 (25 minutes)

The exploration of physics beyond the Standard Model (BSM) remains a central goal of the LHC program. Despite the success of the SM, open questions such as the nature of dark matter, the matter–antimatter asymmetry, and the origin of electroweak symmetry breaking suggest the existence of new phenomena at the TeV scale. This presentation summarizes recent highlights from the ATLAS and CMS experiments in the search for new physics, focusing on both supersymmetry (SUSY) and other exotic signatures, such as long-lived particles and heavy resonances. The results are interpreted within a broad range of theoretical frameworks, setting stringent limits on new particle properties, and providing guidance for ongoing analyses with Run 3 data.

Primary author: HAN, Shuo (IHEP (高能所))

Presenter: HAN, Shuo (IHEP (高能所))

Session Classification: Plenary

Track Classification: CMS