

## Phenomenology 2023 Symposium



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# Search for long-lived particles decaying to trackless jets with advanced machine learning techniques at CMS

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Novel techniques, using trackless and delayed jet information combined in a deep neural network discriminator, can be employed to identify decays of long-lived particles. In this talk we present how such techniques could be exploited to search for long-lived particles decaying in the outer regions of the CMS silicon tracker or in the calorimeters. The results, obtained using the full Run-II dataset collected at the LHC, are interpreted in a simplified model of chargino-neutralino production, where the neutralino is the next-to-lightest supersymmetric particle, is long-lived, and decays to a gravitino and either a Higgs or Z boson.

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