

To catch a long-lived particle

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Conventional searches for new phenomena at collider experiments tend to focus on prompt particles, produced at the interaction point and decaying rapidly. New physics models including long-lived particles that travel a substantial distance in the detectors before decaying provide an interesting alternative, especially in light of the lack of new phenomena at the current LHC experiments, and could solve unanswered questions of the Standard Model. Long-lived particles have characteristic experimental signatures that, while making them clearly distinct from other processes, also could make them potentially invisible to current data-acquisition methods. Specific trigger strategies need to be in place to target long-lived particles. In this talk I will discuss this and propose strategies to not miss this kind of signature in future colliders.

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