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Unconventional Track Signatures at a 10 TeV Muon Collider

Thursday 16 May 2024 16:00 (15 minutes)

This study investigates a detector designed for a 10 TeV Muon Collider, a proposed next-generation facility. With the target luminosity of 10 ab^{-1}, this facility would enable direct searches for compelling Beyond the Standard Model (BSM) scenarios as well as precision measurements of Standard Model properties. We study the impact of beam-induced background (BIB), a unique aspect of Muon Colliders where the muon beam decay products affect detector performance. Distinguishing between background particles and those of interest poses challenges for the detector design and event reconstruction. We concentrate on optimizing the tracker's performance through detailed studies of its resolution, efficiency, and fake rates, for a variety of prompt and long-lived track signatures

Mini Symposia (Invited Talks Only)

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