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MAIA: A Detector Concept for a 10 TeV Muon Collider

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The prospect of a muon collider has fueled remarkable research and development efforts across physics frontiers. As the high-energy physics community continues to make strides towards the feasibility of a 10 TeV-scale muon collider, both the International and US Muon Collider Collaborations (IMCC and USMCC) have achieved significant progress in detector R&D, producing two potential detector designs currently under study. This talk will focus on one such concept, MAIA (Muon Accelerator Instrumented Apparatus). We will discuss the detector design, the strategies we employ to mitigate beam-induced background, and the latest results of performance studies. Finally, we will address some of the exciting opportunities the MAIA effort's remaining challenges provide for cutting-edge R&D.

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