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Probing muon philic forces at a muon collider

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Experimental anomalies like the muon g-2 and the decay of the B meson $B \to K\mu\mu$ suggest the existence of interactions that predominantly talk to the muon. The muon philic nature of these hypothetical interactions is necessary to avoid experimental constraints on lepton flavor violating processes. Models that explain g-2 feature either light weakly coupled states or heavy strongly coupled new particles. Most explanations for $B \to K\mu\mu$ feature only the latter option. In both cases, we show how a combination of direct and indirect signatures at a muon collider can cover the entire parameter space that explains the aforementioned anomalies in the context of a set of benchmark models.

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Collaboration / Activity

NA

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