

Inaugural US Muon Collider Meeting

Fermilab, August 7-9, 2024

indico.fnal.gov/e/usmc2024

Contribution ID: 20

Type: **not specified**

Searching for Heavy Leptophilic Z' at Future Muon Collider

We study the phenomenology of leptophilic Z' gauge bosons at the future muon collider. The leptophilic Z' model, although well-motivated, remains largely unconstrained from current low-energy and collider searches for Z' masses above $\mathcal{O}(100 \text{ GeV})$, thus providing a unique opportunity for future lepton colliders. Taking $U(1)_{L_\mu-L_\tau}$ models as concrete examples, we show that future muon collider with multi-TeV center-of-mass energies provide unprecedented sensitivity to heavy leptophilic Z' bosons.

Primary authors: DASGUPTA, Arnab (Seoul National University of Science and Technology); DEV, Bhupal (Washington University in St. Louis); WANG, Si; XIE, Keping (University of Pittsburgh); PADHAN, ROJALIN (Institute of Physics, Bhubaneswar, India); HAN, Tao (University of Pittsburgh)

Presenter: WANG, Si

Session Classification: Poster Session and Reception