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Neutrino Physics at or from a Muon Collider

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1. We propose a neutrino lepton collider where the neutrino beam is generated from TeV scale muon decays. Such a device would allow for a precise measurement of the W mass based on single W production. Although it is challenging to achieve high instantaneous luminosity with such a collider, we find that a total luminosity of $0.1/\text{fb}$ can already yield competitive physics results
2. We further propose a novel neutrino neutrino collider where the neutrino beam is generated from TeV scale muon decays. Such collisions can happen between either neutrinos and anti-neutrinos, or neutrinos and neutrinos.

Refs:

- <https://arxiv.org/abs/2204.11871>
- <https://arxiv.org/abs/2205.15350>
- <https://arxiv.org/abs/2211.05240>
- <https://arxiv.org/abs/2301.02493>
- <https://arxiv.org/abs/2302.09874>

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