Contribution ID: **5** Type: **not specified**

Mu to e gamma search using converted photon

Current search for charged lepton flavor violating decay mu -> e gamma is limited by the accidental background. Future facility such as Project X at Fermilab could provide a much more intensive beam but one needs a more sensitive detector as well. One of the limiting factors in current detectors is the photon energy resolution of the calorimeter. We present a study of a conceptual design of a new detector, using a fast simulation software, that detects converted e+e- pairs from signal photons, taking advantage of a much better energy resolution of a charged particle tracking device.

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Track Classification: Muon Physics