

# Searches for long-lived particle decays in MicroBooNE

*Wednesday, 29 July 2020 19:30 (15 minutes)*

The MicroBooNE experiment consists of a 50 m<sup>3</sup> active volume liquid argon time projection chamber (TPC) that sits 470 m from an 8 GeV proton beam on a beryllium target, and 690 m from a 120 GeV proton-on-graphite fixed target. These high-intensity beams may be creating a large flux of neutral long-lived particles (LLPs) with masses in the few-hundred MeV range, that are decay products of kaons produced in the fixed target collisions. Amongst other LLPs, the experiment has sensitivity to light scalars that can be produced, in association with pions, in kaon decays; such scalar decay modes have been proposed to explain an anomalous excess of  $K_L^0 \rightarrow \pi^0 + \text{invisibles}$  events recently observed by the KOTO experiment. If the LLPs can reach and decay inside the TPC, they will be observed through their daughter decay electrons, muons and/or pions. In this talk I will present the latest results from the experiment for the searches of these LLPs decaying within the detector.

## I read the instructions

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