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Search for a Higgs portal scalar decaying in MicroBooNE

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The MicroBooNE detector is an 85-ton liquid argon time projection chamber that has been operating in Fermilab's neutrino beamlines since 2015. Although primarily designed to measure neutrino interactions, the high intensity meson beamlines coupled with the high resolution detector and excellent high-multiplicity electron, muon or pion identification, allows for searches for New Physics in rare meson decays. In the Higgs portal model a new scalar boson mixes with the Higgs boson. The scalar boson can be produced in kaon decays, and decay to lepton or pion pairs. This model attracted some interest due to its ability to explain an excess of neutral kaon decays reported by the KOTO experiment in 2019. In this talk I will present recent MicroBooNE competitive limits on the Higgs portal scalar model.

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