Abstract Submitted
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Search for the appearance of atmospheric tau neutrinos in Super-Kamiokande ZEPENG LI, Duke University, SUPER-KAMIOKANDE COLLABORATION — Super-K is a 50 kiloton Water Cherenkov detector with 22.5 kiloton of fiducial volume located at a depth of 2700 meters water equivalent. The large target mass in the fiducial volume offers an opportunity to search for rare tau neutrino appearance from oscillations of atmospheric neutrinos. Events after reduction are classified by a particle identification, based on a neural network (Multilayer Perceptrons), that is optimized to distinguish tau leptons produced by charged-current tau neutrino interactions from electron and muon neutrino interactions in the detector. Super-K atmospheric neutrino data are fit with an unbinned maximum likelihood method to search for tau neutrino appearance. The talk presented results with data taken between 1996 and 2014, comprising 4582 days of live time.

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