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Search for D^0 mixing in $D^0 \to K^-\pi^+\pi^-\pi^+$ YI ZHENG, Massachusetts Institute of Technology, BABAR COLLABORATION — We report on studies of the right sign and wrong sign decays of $D^0 \to K^-\pi^+\pi^-\pi^+$ using 230.4 fb⁻¹ of data collected by the BaBar experiment. The preliminary measurement of the doubly Cabbibo-suppressed rate for the $D^0 \to K^-\pi^+\pi^-\pi^+$ decay is presented, which can provide insights into searching for D^0 mixing via this hadronic decay of neutral D meson.

James Olsen Princeton University

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