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First measurement of the K± → π0 π0 μ± ν (K00mu4) decay with the NA48/2 experiment at CERN

Tuesday 3 May 2022 16:20 (20 minutes)

Preliminary results of the K± ⟶ μ ± π0π0ν (Kmu400) decay first observation and analysis based on the NA48/2 data collected in 2003-2004 are presented. The branching ratio measurement is done on the basis of 2437 selected candidates with about 20% background. In the restricted region of squared dilepton mass above 0.03 GeVˆ2/cˆ4, the branching ratio is Br(Kmu400, M2(2l)>0.03 GeV2/c4) = (0.65 ± 0.03) x 10-6. The full phase space result is Br(Kmu400) = (3.4 ± 0.2) x 10-6 depending on the decay model extrapolation. This result agrees with a ChPT-based calculation using experimental form factors input.

Submitted on behalf of a Collaboration?

Yes

Authors: OLTHER AUTHOR; CENCI, Patrizia (INFN Perugia (IT)); FANTECHI, Riccardo (Universita & INFN Pisa (IT))

Presenter: FANTECHI, Riccardo (Universita & INFN Pisa (IT))

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