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Measurement of the very rare $K+\rightarrow\pi+vv^{-}$ decay at the NA62 experiment at CERN

The NA62 experiment reports the branching ratio measurement BR(K+ $\rightarrow \pi+\nu\nu$) at 68% CL, based on the observation of 20 signal candidates with an expected background of 7.0 events from the total data sample collected at the CERN SPS during 2016-2018. This provides evidence for the very rare K+ $\rightarrow \pi+\nu\nu$ decay, observed with a significance of 3.4 σ . The experiment achieves a single event sensitivity of (0.839±0.054)×10–11, corresponding to 10.0 events assuming the Standard Model branching ratio of (8.4±1.0)×10–11. The result represents the most accurate measurement achieved so far of this ultra-rare decay. Future prospects and plans for data taking from 2021 will also be presented.

Working group

WG3

Author: CENCI, Patrizia (INFN Perugia (IT))

Presenter: FIORENZA, Renato (Universita e sezione INFN di Napoli (IT))

Session Classification: Poster session NB: do not use Safari; use Firefox, Chrome or Edge