## Measurement of the rare K+ to pi+ nu nubar decay

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The decay  $K + \rightarrow \pi + \nu \nu$ , with a very precisely predicted branching ratio of less than 10-10, is among the best processes to reveal indirect effects of new physics.

The NA62 experiment reports the branching ratio measurement BR(K+ $\rightarrow\pi+\nu\nu^{-}$ ) = (10.6+4.0–3.4|stat ± 0.9syst) × 10–11 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 $\sigma$ . 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. This measurement is also used to set limits on BR(K+ $\rightarrow\pi+X$ ), where X is a scalar or pseudo-scalar particle. Details are given of the analysis of the 2018 data sample, which corresponds to about 80% of the total data sample.

Future NA62 plans and prospects are also reviewed.

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