

Abstract Submitted
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Latest result on the search for the $K^+ \rightarrow \pi^+ \nu \nu$ decay at the NA62 experiment at CERN ENRICO LARI¹, Pisa INFN and University, NA62 COLLABORATION² — The ultra-rare $K^+ \rightarrow \pi^+ \nu \nu$ decay benefits from a precisely predicted Standard Model branching ratio of $O(10^{-11})$, almost free from theoretical uncertainties. Most important, it benefits from a high sensitivity to many beyond-the-standard-model scenarios, making it one of the best candidates to reveal indirect effects of new physics in the flavour sector. The NA62 experiment at the CERN SPS, proposed and designed to measure the branching ratio of $K^+ \rightarrow \pi^+ \nu \nu$ with a decay-in-flight technique, collected data in 2016-2018. The latest result of the data analysis will be presented. This result represents the most accurate measurement of this ultra-rare decay achieved so far. Prospects and plans for future data taking will also be outlined.

¹The abstract is submitted by P. Cenci, chair of the Conference Committee of the NA62 experiment at CERN. If it will be accepted as a talk, a different presenting author will be appointed as a speaker by the NA62 collaboration.

²<https://na62.web.cern.ch/>

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