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## Analysis of the rare $K^{\{+\}} \rightarrow e^{\{+\}} \nu \mu^{\{+\}} \mu^{\{-}$ decay at NA62

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The main goal of the NA62 experiment at CERN is to measure the probability of the ultra-rare  $K^{\{+\}} \rightarrow \pi^{\{+\}} \nu \nu$  decay. The collected statistics for 2016-2018 years, allows us to analyze other rare decays, in particular,  $K^{\{+\}} \rightarrow e^{\{+\}} \nu \mu^{\{+\}} \mu^{\{-}$ . Since the inner bremsstrahlung (IB) for  $K^{\{+\}} \rightarrow e^{\{+\}} \nu \mu^{\{+\}} \mu^{\{-}$  decay is suppressed (0.03%), this decay is well suited for measuring form factors ( $F_{\{V\}}$ ,  $F_{\{A\}}$ , and  $R$ ). The chiral perturbative theory (ChPT) prediction of the decay probability  $K^{\{+\}} \rightarrow e^{\{+\}} \nu \mu^{\{+\}} \mu^{\{-}$  with a value of  $1.12 \cdot 10^{\{-8\}}$  is known. The previous experimental result is  $(1.7 \pm 0.5) \cdot 10^{\{-8\}}$ . We present the research methodology, the first results of signal selection, and the study of the background sources for the decay.

### Summary

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