

# WIN2019 The 27th International Workshop on Weak Interactions and Neutrinos.



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## Latest results from NA62

*Tuesday, 4 June 2019 17:25 (30 minutes)*

The NA62 experiment at CERN SPS was designed to measure  $BR(K^+ \rightarrow \pi^+ \nu \bar{\nu})$  with in-flight decays, a novel technique for this channel. NA62 took its first physics data in 2016, reaching the sensitivity to the decay at the Standard Model BR. The experiment collected 10 times more statistics in 2017 and a similar amount of data is expected from the 2018 run.

The result on  $K^+ \rightarrow \pi^+ \nu \bar{\nu}$  from the full 2016 data set and the latest extrapolation and background evaluation from the 2017 data set will be presented. Prospects for improvements to be achieved with the full data set will also be discussed.

A large sample of charged kaon decays into final states with multiple charged particles was also collected in 2016-2018. The sensitivity to a number of Lepton Flavour and Lepton Number violating  $K^+$  decays provided by this data set is an order of magnitude beyond the current state of the art. The latest results of the search for  $K^+ \rightarrow \pi^- l^+ l^+$  ( $l = \mu, e$ ) decays and prospect for the search of  $K^+ \rightarrow \pi^- \mu^+ e^+$  and  $K^+ \rightarrow \pi^+ \mu^- e^+$  processes will be presented.

### Collaboration name

NA62 Collaboration

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**Session Classification:** Flavor and Precision Physics

**Track Classification:** Flavor and Precision Physics