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PHYSICS BEYOND SM WITH KAONS FROM NA62

The decay K+⟶π+νν, with a very precisely predicted branching ratio of less than 10exp(-10), is one of the best candidates to reveal indirect effects of new physics at the highest mass scales. The NA62 experiment at the CERN SPS is designed to measure the branching ratio of the K+⟶π+νν with a decay-in-flight technique. NA62 took data so far in 2016-2018. Statistics collected in 2016 allowed NA62 to reach the Standard Model sensitivity for K+⟶π+νν, entering the domain of 10exp(-10) single event sensitivity and showing the proof of principle of the experiment. Thanks to the statistics collected in 2017, NA62 surpasses the present best sensitivity. The analysis strategy is reviewed and the preliminary result from the 2017 data set is presented.
A large sample of charged kaon decays into final states with multiple charged particles was collected in 2016-2018. The sensitivity to a range of lepton flavor and lepton number violating kaon decays provided by this data set improves over the previously reported measurements. Results from the searches for these processes with a partial NA62 data sample are presented.

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