



Contribution ID: 87

Type: Afternoon Session

Latest results from the NA62 experiment at CERN

Friday, 26 April 2019 18:15 (15 minutes)

The NA62 experiment at CERN SPS is designed to measure $\text{BR}(K^+ \rightarrow \pi^+ \nu \bar{\nu})$ with 10% accuracy. The high-intensity setup, trigger system flexibility and detector performance make NA62 particularly suitable to search for physics beyond the Standard Model with kaon decays and to perform direct searches for long-lived hidden-sector particles, such as dark photons, dark scalars, axion-like particles, and heavy neutral leptons, using kaon and pion decays as well as operating the experiment in dump mode. NA62 took its first physics data in 2016, reaching sensitivity to the $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ decay at the level of the Standard Model BR. The experiment collected 10 times more statistics in 2017 and 2018. The result on $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ from the full 2016 data set will be presented and prospects for future improvements will be discussed.

The sensitivity to a number of lepton flavour and lepton number violating K^+ decays provided by the sample of charged kaon decays into final states with multiple charged particles collected in 2016-2018 is an order of magnitude beyond the current state of the art. Results of the search for these processes with a partial NA62 data sample will be presented. The status of hidden-particle searches will be reviewed together with prospects for future data taking at NA62.

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Session Classification: Contributed talks

Track Classification: Physics beyond the standard model