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Search for lepton number and flavour violation in K+ and pi0 decays

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The NA62 experiment at CERN collected a large sample of charged kaon decays into final states with multiple charged particles in 2016-2018. This sample provides sensitivities to rare decays with branching ratios as low as 10-11.
Searches for the lepton number violating $K^+ \to \pi^- \mu^+ e^+$ decay and the lepton flavour violating $K^+ \to \pi^+ \mu^- e^+$ and $\pi^0 \to \mu^- e^+$ decays are reported. No evidence for these decays is found and upper limits of the branching ratios are obtained at 90% confidence level. These results improve by one order of magnitude over previous results for these decay modes.

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