

Precision measurements of rare kaon decays

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We report the latest results on rare kaon decays from NA48/2 experiment. Samples of 7200 reconstructed $K^+ \rightarrow \pi^+ e^+ e^-$, and more than 3000 $K^+ \rightarrow \pi^+ \mu^+ \mu^-$ events, with very small background contamination, have been collected. The latter is exceeding the total existing statistics by a factor of five. A precise measurement of the branching fractions and the form factors of the rare decays $K^+ \rightarrow \pi^+ l^+ l^-$ has been performed using different theoretical models.

The precise measurement of direct photon emission (DE) in the decay $K^+ \rightarrow \pi^+ \pi^0 \gamma$ and its interference (INT), with the INT amplitude being observed for the first time, has been finalized. This study is based on the full NA48/2 data set with about 600k reconstructed $K^+ \rightarrow \pi^+ \pi^0 \gamma$ decays which is factor of 30 larger than for previous experiments. We report the results on the CP violating asymmetry between K^+ and K^- obtained from rare kaon decays.

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