

Recent NA48/2 results on K_{e4} and $K_{3\pi}$ decays and determination of $\pi\pi$ scattering lengths

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Recent results on pion-pion scattering in the final state of charged Kaon decays will be presented. A large sample of these decays has been collected in 2003 and 2004 by the NA48/2 experiment at CERN SPS.

At the $\pi^+\pi^-$ threshold, the $\pi^0\pi^0$ invariant mass spectrum of the decay $K^\pm \rightarrow \pi^\pm\pi^0\pi^0$ exhibits a Wigner cusp, from which the S-wave $\pi\pi$ scattering lengths are extracted with high precision.

The same scattering lengths are also independently determined from the accurate measurement of the form factors and the phase ($\delta \equiv \delta_s - \delta_p$) in the K_{e4} decay $K^\pm \rightarrow \pi^+\pi^-e^\pm\nu$.

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