## KLOE measurement of form factor slopes for K\_L to pi l nu decays.

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Semileptonic kaon decays offer possibly the cleanest way to obtain an accurate value of the Cabibbo angle, or better,  $V_{us}$ . At present, the largest uncertainty in calculating  $V_{us}$  from the decay rate, is due to the difficulties in computing the matrix element of the  $K \to \pi$  transition. The matrix element of  $K_L 
ightarrow \pi \mu \nu$  decay is expressed in terms of kaon and pion four-momenta, P and p respectively, and using form factors  $f_+(t)$  and  $f_0(t),$ where  $t = (P - p)^2$ . It is customary to expand the scalar form factor  $f_0(t)$  in powers of t as  $f_0(t) = f_+(0) \left[ 1 + \lambda'_0 t / m^2 + .. \right]$ , where m is the mass of the carged pion, and only the linear term is retained. The form factor at zero momentum transfer,  $f_+(0)$ , is evaluated from theory, while the form factor slope,  $\lambda_0'$ , has to be determined experimentally from  $K_L \rightarrow \pi \mu \nu$ decay spectra. The best sensitivity to  $\lambda_0'$  is achieved in KLOE by using the neutrino energy spectrum. Such a measurement is possible because of the tagging technique, consisting of identifying  $K_L$  decays through the selection of  $K_S \rightarrow \pi^+ \pi^$ decay near the  $e^+e^-$  interaction point. This strategy allows to measure  $K_L$ momentum with good precision. We present the results of this analysis, based on 330  $pb^{-1}$ of data acquired during years 2001 and 2002.

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