



Purpose: Study the very rare decay $K^+ \rightarrow \pi^+ \nu \bar{\nu}$

- ▶ $\text{BR}_{SM}(K^+ \rightarrow \pi^+ \nu \bar{\nu}) = (8.0 \pm 1.1) \times 10^{-11}$
- ▶ $|V_{td}|$ determination
- ▶ New Physics

Sensitivity: 80 SM events/ 2×100 days of data taking

R&D Progressing at full speed:

- ▶ Photon Vetoes (medium and small angle)
 - ▶ Test with photon tagged beam at CERN in October 2006 to measure the inefficiency at energies < 10 GeV
 - ▶ Test also prototype of SAC calorimeter
 - ▶ Analysis in progress

News from P326 at CERN



- ▶ Kaon ID
 - ▶ Test beam in november 2006 with a CEDAR at CERN
- ▶ Beam Tracker
 - ▶ Si micro-pixel: first prototypes, radiation test started

P326 R&D in 2007

- ▶ RICH
- ▶ STRAW Tracker
- ▶ Photon Vetoes (l. a.)

Prototypes under construction NOW
Ready in 2007 for test

Physics Run in 2007

Very precise measure of the ratio:

$$R_K = \Gamma(K \rightarrow e\nu) / \Gamma(K \rightarrow \mu\nu)$$

Contributions by lepton flavour violating effects predicted in SUSY models can change R_K of $\approx 1\%$ from the SM value