

ORKA, The Golden Kaon Experiment: Precision measurement of $K^+ \rightarrow \pi^+, \nu, \bar{\nu}$ and other ultra-rare processes.

Friday, 15 June 2012 11:00 (25 minutes)

Precision measurement of the ultra-rare $K^+ \rightarrow \pi^+, \nu, \bar{\nu}$ decay at Fermilab would be one of the most incisive probes of quark flavor physics this decade. This sensitivity is unique in quark flavor physics and allows probing of essentially all models of new physics that couple to quarks within the reach of the LHC. Furthermore, a high precision measurement is sensitive to many models of new physics with mass scales well beyond the direct reach of the LHC. The ORKA initiative aims to precisely measure this process based on established detector techniques driven with the Fermilab Main Injector high intensity proton source. In recognition of this exciting opportunity the Fermilab director has recently granted scientific approval to the ORKA proposal. The experimental technique and prospects will be discussed.

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Session Classification: New Experiments

Track Classification: Kaon Physics