

NAL PROPOSAL NO. 264

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Exposure of Emulsions to 200-300 GeV π^-
for
New Determination of Mean Life of π^0

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October 26, 1973

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(Proposed Extension of Experiment 195)

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1. The purpose for the proposed extension is to make use of the high energy π^- meson beam to produce π^0 through the charge exchange reaction ($\pi^-p \rightarrow \pi^0n$), in which the energy and, consequently, the path length of π^0 are expected to be much longer than those in the p-p collision. As stated in our proposal for Exp. 195, a longer path length will make the determination of π^0 mean life more accurate.
2. We would like to request exposures of three emulsion stacks to the 200-300 GeV π^- beams. Each stack will consist of 10 pellicles of 3" x 7" x 600 μ each.
3. The desired intensities of π^- beam are 5×10^4 , 1×10^5 and 5×10^5 per cm^2 .



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October 26, 1973