

NAL Proposal No. 217
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A Comparison of 100 GeV and 200 GeV π^+p Interactions

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This is a proposal to examine π^+p interactions at 200 GeV using the 30-inch bubble chamber. A run of 50,000 photos would be taken to match the 100 GeV data sample already authorized for this same group.

The physics would be the same as in the 100 GeV run, but now an energy dependent comparison would be made. The confidence in this comparison would be enhanced by the fact that the analysis would be done by the same group, as in the case of the 100 GeV and 400 GeV pp runs, thus minimizing systematic differences.

Even should GeV π^-p results be similar to those of 100 GeV π^+p , it is not entirely safe to conclude that the π^-p and π^+p energy dependences are the same. At least one other π^+ energy should be examined. We are proposing to undertake that examination.