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CM-P00045684

CERN/SPSC 77-98
SPSC/P 68/Add. 1/S
16 November 1977

ADDENDUM TO P-68

THE STUDY OF $\bar{p}p$ ANNIHILATIONS FROM ($\bar{p}p - pp$) DIFFERENCES

AT THE HIGHEST ENERGY (150 GeV/c) IN BEBC

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ABSTRACT

The physics aims of our original proposal are revised in the light of recent theoretical and experimental developments. By measuring ($\bar{p}p - pp$) differences, we seek to investigate $\bar{p}p$ annihilations at the highest available energy, and make comparisons with $\bar{e}e \rightarrow$ hadrons at equivalent DESY, SLAC and CESR energies. The basic parameters of $\bar{p}p$ annihilations will be investigated, such as multiplicity distributions and moments of charged particles, but emphasis will be placed on neutral particle production to which BEBC is especially suited. Measurements of correlations amongst centrally produced particles will test the $q\bar{q}$ jet structure proposed by Veneziano and co-workers to describe final states in lepton and hadron induced processes.

The ($\bar{p}p - pp$) difference data will also permit detailed tests of Regge and Mueller-Regge ideas free from complications of pomeron exchange. These data will also complement and provide a basis for comparison with information that could arise from $\bar{p}p$ studies in the ISR energy range.