

Longitudinal Beam Echo in the CERN-SPS,
O. BRÜNING, T. LINNECAR, F. RUGGIERO,
W. SCANDALE, E. SHAPOSHNIKOVA, CERN -

Longitudinal echo signals can be produced in the CERN-SPS by exciting a coasting proton beam at 120 GeV/c with two short RF pulses at different harmonics of the revolution frequency, separated by a suitable time-delay. The echo response of the beam appears at the frequency difference, chosen around 1 MHz. The expected phenomenology of the echo is extensively illustrated with numerical simulations and analytical considerations. The experimental set-up is based on the existing RF cavity and longitudinal pick-up used in normal operation. The first experimental evidences of the echo in the SPS are finally discussed.