

Bunched Beam Echos in the AGS*, M. BRENNAN, J. KEWISCH, BNL - Beam echos have been measured at FNAL [1] and CERN [2] in coasting beams. A coherent oscillation introduced by a short RF burst decoheres quickly, but a coherent echo of this oscillation can be observed if the decohered oscillation is 'bounced off' a second RF burst. In this report we describe first longitudinal echo measurements of bunched beam in the AGS accelerator. We applied a method proposed by Stupakov and Kauffmann [3] for transverse beam echos, where the initial oscillation is produced by a dipole kick and is bounced off a quadrupole kick. In the longitudinal case the dipole and quadrupole kicks are produced by cavities operating at 90 degrees and 0 degree phase shift, respectively. Echo effects can be used as a tool to measure diffusion effects. We investigate the application of echos to measure intrabeam scattering diffusion rates in RHIC.

* Work performed under the auspices of the U.S. Department of Energy.

- [1] L. Klamp Spentzouris, et. al., PAC95, Dallas, Texas.
- [2] O. Bruning, et. al., CERN SL-MD 206
- [3] Stupakov, et. al., SSCL-587.