

**A Systematic Study of a Transverse Feedback System with a Two-Tap FIR Filter, Y. MINAGAWA, E. KIKUTANI, M. TOBIYAMA, S. KUROKAWA, KEK** - Performance of a transverse feedback system with a simple 2-tap FIR filter was experimentally studied in the TRISTAN AR. The 2-tap FIR filter eliminates DC components and can change the amount of necessary phase shift by the tap-position. An ADC, a 2-tap FIR filter logic and a DAC are packaged in a single-width CAMAC module, which is also equipped with large-size memory, where the bunch oscillations over thousands of turns are recorded. In the experiment, we kicked the beam transversely to create a large amplitude oscillation and then turn on the feedback system to damp this oscillation. By analysing the data stored in the memory we investigated the relation between the tap-position and the damping rate, with various tap-positions for a given tune and with various tunes for a given tap-position. The results agreed with a calculation.