

Observations of Coupled Bunch Instabilities in ELETTRA, C.J. BOCCHETTA, R. DEMONTE, M. FERIANIS, A. FABRIS, F. IAZZOURENE, E. KARANTZOULIS, R. NAGAOKA, C. PASOTTI, M. SVANDRLIK, L. TOSI, R.P. WALKER, A. WRULICH, Sincrotrone Trieste - Coupled bunch instabilities are the most harmful instabilities in ELETTRA. Longitudinal excitations generate an increase in effective momentum spread which has a particularly adverse effect on the higher harmonics of the insertion device radiation spectra, reducing their intensity and increasing their width. The excitation level of coupled bunch instabilities can be effectively controlled by tuning the temperature of the r.f. cavities. For a medium excitation level, a relaxation oscillation is observed in a frequency range corresponding to the damping time. For a small excitation level a coherent longitudinal oscillation is seen. Transverse coupled bunch effects can only be observed after the longitudinal instabilities are reduced. These are compensated by temperature tuning of the cavities, tune adjustment and chromaticity adjustment.