

**A Fast Local Feedback System to Correct the Beam Position Deviation in the ESRF Storage Ring,**

E. PLOUVIEZ, F. UBERTO, ESRF - A system performing a fast local correction of the beam closed orbit has been implemented in one of the straight sections of the ESRF storage ring. Two low noise BPMs are used to measure the transient variations of the position of the beam at both ends of the 5 m straight section. A resolution of  $1\ \mu\text{m}$  of the position measurement is achieved in a 1 KHz bandwidth. The BPM signals are processed digitally and the correction is applied by a set of four fast steerers; the feedback is applied between  $3 \cdot 10^{-3}$  Hz and 100 Hz. This paper gives a description of the low noise BPM system and the DSP electronics. The optimisation of the system parameters (noise, bandwidth, feedback algorithm) is discussed. The results achieved in the stabilisation of the beam are presented.