

General Layout and Time Domain Simulation of a Local Beam Position Feedback System for BESSY-II*, J.D. GILPATRICK**, S. KHAN, D. KRÄMER, BESSY (Berlin, Germany) - Transverse displacements of optical elements due to ground vibrations or magnet power supply ripple may cause unwanted closed orbit fluctuations. For the 1700-MeV synchrotron light source BESSY-II under construction at Berlin/Adlershof, the effect of orbit fluctuations on the beam quality is discussed and a local feedback system to minimize the beam motion within a bandwidth of 100 Hz is presented. The presentation covers the mechanical layout of the system, the design of beam position monitors and corrector magnets, and the intended hardware and software concept for a digital feedback. A time domain simulation is used to explore the correction efficiency of the feedback system under variation of several parameters. A prototype version of the local feedback will be tested at the BESSY-I storage ring.

* Funded by the Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie and by the Land Berlin.

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