Status of Digital Orbit Feedback for SPEAR*,
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C. WERMELSKIRCHEN, SLAC/SSRL - The global
orbit feedback system for SPEAR presently adjusts the
electron beam position at 30 beam position monitors
(BPMs) with a cycle time of approximately 1 min. In
addition, fast analogue servo systems maintain vertical
beam position at 10 beamline photon monitors with a
30 Hz bandwidth using localized orbital bumps. The
global and local servos will soon be merged into a
single unified system operating from a VME-based
DSP board with ancillary interface modules. The goal
is to acquire orbits, process the data, and update
corrector setpoints at millisecond intervals to provide a
closed-loop system bandwidth of 50 Hz or more. In
this paper, we report on our approach to structure data
flow between the BPM processor and the VME crate
and SPEAR computers, our method of managing orbit
corrector control from both computers, the DSP orbit
correction algorithms, and other features of the software
architecture designed to optimize system flexibility.

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