

An Improved Closed Orbit Servo for Energy Ramps on the SRS at Daresbury, S.F. HILL, CLRC
Daresbury Lab. - The SRS is a second generation synchrotron radiation source which ramps from its injection energy of 600 MeV to 2 GeV relatively slowly (~1 minute). Improvements in orbit control have been achieved using discrete corrector application at specific points during the ramp, but this requires regular dedicated beam studies time to re-optimize the stored steering files to match the gradual uncorrected orbit degradation with time. The installation of two new Insertion Devices (IDs) in the ring, with their consequent much reduced vertical aperture specifications, will demand a higher degree of position control and unacceptable use of resources. A ramp orbit control servo program has been commissioned and is in operational use in the normal (multibunch) mode ramp, operating with a loop time of 2 seconds. Results from this, together with a modification to allow the handling of specific conditions used in a relaxed emittance mode (for single bunch filling), are shown. Since the servo must be 'fail-safe' to avoid irradiation of the new ID vessels, methods to handle BPM failures are discussed.