

The Daresbury Global Horizontal Servo Feedback System: Status and Outlook, J.B. FITZGERALD, B.G. MARTLEW, P.D. QUINN and S.L. SMITH, CLRC Daresbury Laboratory, Warrington WA4 4AD, UK - A system of automatic global horizontal orbit position control has now been in regular operational use at the Daresbury Synchrotron Radiation Source for more than a year. Using 16 electron beam position monitors (BPMs), the optimal combination of steering magnets, deduced from the machine response matrix, is applied to correct changes in orbit shape every 30s. The system has proved highly effective in removing orbit ripple due to magnetic field errors, principally caused by thermally induced magnet movements. At present, other apparent errors, notably a slow drift in average orbit radius, are not treated; whilst these could be addressed by varying the RF frequency, this is inappropriate for contributions arising from thermally induced movements of the BPM vessels themselves. Experimental studies are currently underway to assess options for recognising such "false" orbit changes whilst correcting changes due to field errors, a topic which is assuming greater importance with the advent of third generation light sources.