

ORBIT FEEDBACK TRICKERY AT THE NSLS VUV RING

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Abstract

A couple of NSLS user groups has recently requested an unusual modification to the way the VUV ring orbit is controlled and stabilized. Rather than keeping the orbit as stable as possible they require a large (many transverse beam sizes) periodic orbit oscillation at the source points of their beamlines. During regular machine operations this has to co-exist with stable orbit throughout the rest of the ring. Achieving good orbit stability under these constraints presents an interesting control problem. Making use of control theory tools and Matlab / Simulink modeling we have explored various algorithms to allow for these new requirements. We then extended our digital orbit feedback system to incorporate these algorithms. In this paper we present commissioning results as well as comparison to the simulations.

**CONTRIBUTION NOT
RECEIVED**