

The Beams and Applications Seminar Series

An Inquiry into Transverse Stability of the NSLS-II Storage Ring

S. Krinsky

NSLS, Brookhaven National Laboratory

Bldg. 401, rm B2100

Thursday, October 20, 10:00 am

(please note special time)

Host: Y. Li / K. Harkay, ASD

A high-brightness storage ring, NSLS-II, is under design at BNL. Small-gap undulators are of key importance to this design, and one must assure that the transverse impedance of the ring is within bounds. We have carried out computer simulations to study the transverse coupled-mode instability (TMCI). Our calculations have been performed using transverse short-range wakefields describing: a broad-band resonator; a resistive wall with normal surface impedance; and a chamber wall with extreme anomalous skin effect. We have considered: (1) the ring with a single-frequency RF system for which the equilibrium longitudinal bunch distribution is Gaussian; and (2) the ring with a third harmonic (Landau) cavity included to lengthen the bunch. Based on current NSLS-II design parameters, we discuss estimates of the TMCI threshold behavior.

For more information visit

<http://www.aps.anl.gov/asd/physics/seminar.html>

Visitors from off-site please contact Chun-xi Wang
(wangcx@aps.anl.gov, 630-252-4968) to arrange for a gate pass.

This ANL seminar series is a CARA activity and focuses on the physics, technology and applications of particle and photon beams. It is sponsored jointly by the ASD Division, the AWA group of the HEP Division, and the ATLAS group of the PHY Division.