

The Beams and Applications Seminar Series
***Free electron lasers with slowly-
varying beam and undulator
parameters***

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**Bldg. 401, room B2100
Friday, Feb. 25, 1:30 pm**

Host: Y. Li, ASD

An x-ray FEL such as the Linac Coherent Light Source requires an electron beam of a few kilo-Ampere peak current and a small-gap undulator system of more than a hundred meter in length. The resistive wall wakefield of the vacuum pipe may significantly change the beam energy inside the undulator and degrade the FEL performance. In this talk, I will present an analytical description of the FEL process in the small signal regime with slowly-varying beam energy and undulator parameter. The theoretical results, which agree with numerical simulations, will be applied to optimize the undulator taper and to evaluate LCLS wakefield effects.

For more information visit

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

Visitors from off-site please contact Yuelin Li
(ylli@aps.anl.gov, 630-252-7863) 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.