The Beams and Applications Seminar Series

Diagnostics for High-Intensity Proton Beams at Los Alamos National Laboratory

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Bldg. 401, Room B2100

Friday, June 27, 1:30 PM

Host: Peter Ostroumov

The mesa surrounding the 800-MeV Los Alamos Neutron Science Center (LANSCE) facility has had several intense-beam facilities. The Low Energy Demonstration Accelerator (LEDA) was used to demonstrate a CW 6.7-MeV beam facility with a 0.67 MW proton output beam for the Accelerator for Production of Tritium (APT). During LEDA's final two years of operation (it is presently in cold standby mode), it served as the first dedicated experiment for investigating beam halo formation. At the LANSCE facility, two new beam lines have been installed to both improve operational tuning and provide new capabilities within the facility. The Isotope Production Facility (IPF) will provide isotopes for medical purposes by using the H+ beam spur at 100 MeV, and the Switchyard Kicker Upgrade (SYK) will allow the LANSCE 800-MeV H- beam to be rapidly switched between various beam lines within the facility. The beam position measurements for both of these beam lines use a standard micro-stripline beam position monitor (BPM) with both a 50-mm and 75-mm radius. The cable plant is unique in that it unambiguously verifies the operation of the complete position instrumentation. The processing electronics use a log ratio technique with error correction such that it has a dynamic range of -12 dBm to -85 dBm with errors less than 0.15 dB within this range. This presentation will describe various measurement systems installed on the LEDA and LANSCE IPF and SYK beam lines.

For more information visit

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

Visitors from off-site please contact John Power
(jp@anl.gov, 630-252-3191) to arrange for a gate pass.

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