

DEVELOPMENT OF HIGH RESOLUTION BEAM PROFILE IMAGING DIAGNOSTICS

A. Murokh, G. Andonian, A.A. Bechtel, B. Jacobson, M. Ruelas, S. Wu,
RadiaBeam, Santa Monica, USA
M. Fedurin, BNL, Upton, Long Island, New York, USA
J. Rosenzweig, UCLA, Los Angeles, California, USA

Abstract

Accurate characterization of an electron beam profile is often a critical instrumentation task at modern light sources and advanced acceleration facilities. Yet ultra-small emittances presently achievable in photo-injectors are often testing the limits of the traditional diagnostic systems such as scintillating screens or optical transition radiation (OTR) monitors. To mitigate some of the limitations on resolution and accuracy of beam profile measurements, a number of novel experimental approaches are presently under development at RadiaBeam, including optical fiber based Cerenkov radiation monitors, all-reflective optics OTR monitors, and DUV/EUV transition radiation monitors with sub-micron resolution. We report development status and initial experimental results.

CONTRIBUTION NOT RECEIVED