

Abstract Submitted
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Spatial resolution test of a beam diagnostic system for DESIREE

SUSANTA DAS, A. KALLBERG, Manne Siegbahn Laboratory, Stockholm University — A diagnostic system based on the observation of low energy (~ 10 eV) secondary electrons (SE) produced by a beam, striking a metallic foil has been built to monitor and to cover the wide range of beam intensities and energies for Double ElectroStatic Ion Ring ExpEriment [1,2]. The system consists of a Faraday cup to measure the beam current, a collimator with circular apertures of different diameters to measure the spatial resolution of the system, a beam profile monitoring system (BPMS), and a control unit. The BPMS, in turn, consists of an aluminum (Al) foil, a grid placed in front of the Al foil to accelerate the SE, position sensitive MCP, fluorescent screen, and a CCD camera to capture the images. The collimator contains a set of circular holes of different diameters and separations (d) between them. The collimator cuts out from the beam areas equal to the holes with separation d mm between the beams centers and creates well separated (distinguishable) narrow beams of approximately same intensity close to each other. A 10 keV proton beam was used. The spatial resolution of the system was tested for different Al plate and MCP voltages and resolution of better than 2 mm was achieved. Ref.: 1. K. Kruglov *et al.*, NIM A 441 (2000) 595; 701 (2002) 193c, 2. MSL and Atomic Physics, Stockholm Univ. (www.msl.se, http://www.atom.physto.se/Cederquist/desiree_web_hc.html).

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