Joint DESY and University of Hamburg Accelerator Physics Seminar

Tuesday January 06, 2004

(16:00 in Room 459/30b)

Continuous Wave Energy Recovery Operation of an XFEL

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Abstract

Commissioning of two large coherent light facilities at SLAC and DESY should begin in 2008 and in 2011 respectively. In this seminar I will look further into the future, hoping to answer, in a very preliminary way, two questions. First: "What will the next generation of the XFEL facilities look like?" Believing that superconducting technology offers advantages such as high quality beams with highly populated bunches, the possibility of energy recovery and higher overall efficiency than warm technology, I will comment on the preliminary study on the superconducting option of the XFEL facility. From this, the second question arises: "What modifications in superconducting technology and in the machine design are needed, as compared to the present DESY XFEL, and what kind of R&D program should be proposed to arrive in the next few years at a technically feasible solution with even higher brilliance and increased overall conversion of AC power to photon beam power?" In this seminar I will very often refer to and profit from the DESY XFEL design, acknowledging its many technically innovative solutions.

D.P.Barber (MPY), J.Rossbach (Univ. HH), P.Schmüser (Univ. HH), and M.Vogt (MPY).