Accelerator Physics Seminar

Monday, June 23, 2003

(15.00 in Room 459/30b)

Acceleration of Polarized Proton and Deuteron Beams to Medium Energies

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Abstract

During the past decade, experiments with polarized beams became important parts of the scientific program at many accelerator facilities such as the IUCF Cooler Ring, the MIT–Bates Storage Ring, the Cooler-Synchrotron COSY, RHIC at Brookhaven and HERA at DESY.

At the Cooler–Synchrotron COSY vertically polarized proton beams with more than 75% polarization are routinely accelerated up to a momentum of 3.65 GeV/c and delivered to internal as well as to external experiments. The intensity of the polarized proton beam could be significantly increased by stacking electron–cooled beams at injection. Recently a vertically tensor- and vector–polarized deuteron beam has been successfully accelerated at COSY. To extend COSY to a complete spin facility, spin manipulation devices are needed. A spin flipping system has recently been commissioned at COSY. In a future upgrade we are planning to install Siberian snakes to provide longitudinally polarized beams to internal as well as to external experiments.

In this talk techniques are discussed to accumulate and accelerate polarized proton und deuteron beams to medium energies.

NOTE THE UNUSUAL DATE AND TIME

D.P.Barber (MPY) and M.Vogt (MPY).

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