

First Experiments with a 100 period Superconductive Undulator of 3.8 mm Period Length, M. FRITZ, T. HEZEL, H.O. MOSER, R. ROSSMANITH, Forschungszentrum Karlsruhe (FZK), ANKA Project Group; TH. SCHNEIDER, FZK, Institute of Technical Physics; H. BACKE, S. DAMBACH, F. HAGENBUCK, K.-H. KAISER, W. LAUTH, A. STEINHOF, TH. WALCHER, Institute of Nuclear Physics, University of Mainz - Undulators with period lengths of several millimeters are promising devices for generating more intense and higher energy photon beams with electron beams of a given energy. In this paper a prototype of a novel minigap superconductive undulator with a period length of 3.8 mm is described. The undulator is 100 periods long and has a nominal field of 1 T in a 1 mm gap at a current of 1000 A through a NbTi wire. Two undulator coils are housed in a specially designed LHe cryostat. First results of measurements of the performance of the undulator without beam are presented. The preparations of experiments at the 855 MeV racetrack microtron MAMI are described. At this energy the fundamental wavelength is expected to be 6.6 Angström.