

Design of Variable Polarizing Undulator (APPLE-type) for SX Beamline in the SPring-8, A. YOKOYA, H. KOBAYASHI,

M. TAKAO, S. SASAKI, T. SHIMADA, and Y. MIYAHARA, JAERI - This describes the design of a variable polarizing undulator(APPLE-type) to be installed in soft X-ray beamline in the SPring-8 facility. The magnetic field distribution and radiation spectrum expected from this undulator were calculated. The magnet field strength is varied by changing the gap distance of upper and lower jaws, so it changes the photon energy in soft X-ray range. By moving the relative position of pairs of magnet rows (phase shift), the polarization of radiation is varied circularly, elliptically and linearly in the horizontal and vertical direction. We expect that right and left hand circular polarizations are obtained alternately at a rate of 1 Hz by high speed phase shifting. The repulsive and attractive magnetic force working on the magnet rows were calculated which interfere in phase shifting at high speed. The magnetic force changes with gap distance and phase shift position, and the magnetic force working on a row in the direction of phase shift amounts to 500 kgf. The construction of this undulator is started in 1996, that will be inserted in storage ring in 1997.