A Double Undulator for the Production of Circularly Polarized Light at BESSY II[*], M. SCHEER, J. BAHRDT, A. GAUPP, G. INGOLD, BESSY (Berlin, Germany) - The Synchrotron Radiation Light Source BESSY II [1,2] is presently under construction at Berlin Adlershof. At an electron energy of 1.7 GeV the rare earth $M_{IV/V}$ edges can be reached with the fifth harmonic of an Sasaki type undulator [3] with a period length of 56 mm. To get considerable flux at higher harmonics the magnetic field has to be elliptical. The degree of ellipticity has been determined by maximizing the merit function: intensity times degree of polarization squared, including electron beam emittance and energy spread. For a fast polarization switching a double undulator will be built. Two light beams separated in space with opposite degree of polarization will be chopped in the beamline. The interaction of the double undulator with the storage ring has been studied.

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1 Status of the Synchrotron Radiation Light Source BESSY II, D. Krämer, to be published in these proceedings.

2 Status of the Insertion Devices for BESSY II, J. Bahrdt et al., to be published in these proceedings.

3 S. Sasaki et al. Jpn. J. Appl. Phys. 31 (1992) L1794; K. Kakuno, S. Sasaki, JAERI-M 92-157 (1992).