

Assessment of the Achievable Emittance Coupling Ratio in DIAMOND, M. MUNOZ, CLRC Daresbury Laboratory, Warrington WA4 4AD, UK - The figure of merit of a synchrotron light source, the brightness, is inversely proportional to the emittance ratio. A third generation source such as DIAMOND should have an emittance ratio as small as possible in order to carry out its scientific programme. In this paper we present a brief review of the phenomena that contribute to the observed emittance ratio and we give an evaluation of its value for DIAMOND for each contribution. Results show that the expected ratio in DIAMOND will be in the range 3-5%, with major contributions both from vertical dispersion and betatron coupling. The second part of the paper presents a skew quadrupole compensation scheme to reduce the value of the emittance ratio to a level of the order of 1%. This scheme can also be used to change the beam shape and size in selected straight sections, in order to provide a round beam in chosen insertion devices.