

Lattice design for Spring-8 II

A feasibility of a very low-emittance storage ring has been studied for an upgrade project of the SPring-8, SPring-8 II. Its ultimate goal is to provide a superior brilliance for 0.5 ~ 100 keV photons. A sextuple bend achromat lattice with the natural emittance of 70 pmrad at 6 GeV has been examined as the first candidate. In order to increase the brilliance and to enlarge the dynamic aperture until the required values, the step-by-step optimization has been performed in designing linear optics, in selecting the betatron tune, and in designing nonlinear optics. The latest design for the coming upgrade of SPring-8 will be presented.

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