

The Proposed Racetrack Lattice for the Synchrotron Light Source ASTRID II,
YU. SENICHEV, ISA, Univ. Aarhus - The Institute for Storage Ring facilities (ISA) at the University of Aarhus is currently developing a third generation synchrotron light source, ASTRID II, capable of operating at the two energies of 600 MeV and 1.4 GeV. At the lower of these energies, ASTRID II would be optimised for the generation of vacuum ultra-violet (VUV) and soft X-ray (SXR) radiation, providing high flux through the use of insertion devices and high brilliance by optimisation of the machine parameters to minimise the natural electron beam emittance. The operation at the higher energy of 1.4 GeV will provide sufficient flux of harder X-rays to facilitate crystallographic studies. The proposed lattice geometry consists of two identical arcs containing combined function bending magnets and focusing quadrupoles separated by two similar optical channels consisting of one or more straight sections. The arcs in the horizontal plane are tuned to a value of $n \times 360$ degrees to form a second-order pseudo-achromat in this plane which will result in a sufficiently large dynamic aperture. In this report we describe a proposed lattice which is capable of achieving these design requirements.