

Probing Some of the Issues of Fourth Generation Light Sources at the ESRF, L. FARVACQUE, J.L. LACLARE, C. LIMBORG, A. ROPERT, K. SCHEIDT, U. WEINRICH, ESRF - The successful operation of the first third generation light sources at performances beyond target specifications has demonstrated the capability of further pushing design considerations. Among the new challenges to be met by the next generation of storage rings, the achievement of diffraction limited emittances and the production of very short pulses whilst keeping a reasonable lifetime and adequate beam stability deserve detailed attention. The flexibility of the ESRF storage ring lattice enables the investigation of these problems running the ring at 1 GeV to obtain very small transverse emittances or operating in a quasi isochronous mode with a small positive or negative momentum compaction. This paper will summarise the results achieved so far.