

SLS Lattice Finalization and Magnet Girder Design, L. RIVKIN, M. ROHRER, A. STREUN, P. WIEGAND, PSI; R. RULAND, SLAC; L. TOSI, Sincrotrone Trieste - SLS is a 2.4 GeV high brightness light source in construction at PSI. Design challenges include a large dynamic aperture and momentum acceptance in order to increase Touschek dominated beam lifetime, the installation of mini gap insertion devices and high mechanical stability of magnets and girders. We will describe the final storage ring lattice with emphasis on dynamic aperture optimisation including effects from 4 mm gap insertions. A novel method to calculate the Touschek relevant effective lattice momentum acceptance and lifetime will be presented. We will also present the design of girders optimised for static and dynamic fatigue (eigenfrequencies > 40 Hz) with high precision fixed positioning of magnets on girders. A system of girder movers will be used for alignment of the girders around the ring ('train link' girder scheme).