

Some engineering considerations for USR light sources

Various projects of storage ring based light source under construction, and upgrade program of existing 3rd generation light sources are pushing the emittance lower and lower. Diffraction limited emittance in vertical direction is achieving in a number of light sources. Diffraction limited emittance in horizontal direction is ultimate performance for storage ring based light source –USR. There are many challenges in lattice design and optimization, in magnet design and manufacturing. Diffraction limited emittance means very small beam size. What should be the beam stability requirement for the USR? Some engineering issues are addressed in this presentation:

- Vacuum chamber and thermal absorber
- Beam stability requirement
- How to reach beam stability
- Heat load issues for beamline optics

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