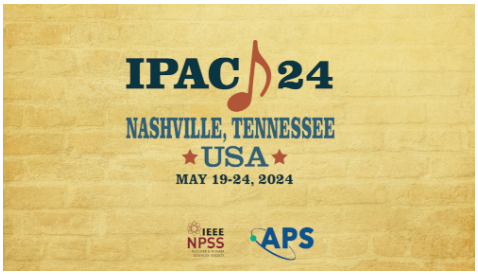

Contribution ID: **1642** Contribution code: **TUPG47** Type: **Poster Presentation**

TDR baseline lattice for SOLEIL II upgrade project

Tuesday, 21 May 2024 16:00 (2 hours)

Previous TDR (Technical Design Report) studies for the SOLEIL upgrade project (SOLEIL II) have converged towards a lattice alternating 7BA and 4BA HOA (High Order Achromat) type cells providing an ultra low natural horizontal emittance value in the 85 pm·rad range at an energy of 2.75 GeV. The new TDR lattice is an evolution that keep the insertion devices photon source points at their present location, allows a better relative magnet positioning and more space for accommodating photon absorbers, BPMs (Beam Position Monitor) and other mandatory diagnostics. This last evolution includes a better modeling of all the bend magnets based on their realistic field profiles and the accommodation of height super-bends for beam-lines as well as for beam size diagnostics. In addition an exhaustive investigation of the systematic and especially the cross-talk multipoles as well as the phase 1 portfolio of insertion devices impacts has been carried out. This paper reports the linear and the non-linear beam dynamic optimizations as well as future directions for performance improvement.

Footnotes

Funding Agency

Paper preparation format

Region represented

Europe

Primary author: LOULERGUE, Alexandre (Synchrotron Soleil)

Co-authors: GAMELIN, Alexis (Synchrotron Soleil); NADJI, Amor (Synchrotron Soleil); NADOLSKI, Laurent (Synchrotron Soleil); TORDEUX, Marie-Agnès (Synchrotron Soleil); BRUNELLE, Pascale (Synchrotron Soleil); NAGAOKA, Ryutaro (Synchrotron Soleil); HABET, Sami (Thomas Jefferson National Accelerator Facility); GUBAIDULIN, Vadim (Synchrotron Soleil)

Presenter: LOULERGUE, Alexandre (Synchrotron Soleil)

Session Classification: Tuesday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A05 Synchrotron Radiation Facilities