



Contribution ID: 189 Contribution code: WEP42

Type: Poster Presentation

Mechanical design and development status of a Superconducting Wavelength Shifter for Sirius

Wednesday 17 September 2025 17:00 (1 hour)

A cryogen-free Superconducting Wavelength Shifter (SWLS) designed to generate a peak magnetic field of 6.6 T, operating at 5 K, is currently under development for an upcoming hard X-ray beamline of Sirius, the Brazilian synchrotron fourth-generation light source. This work presents an overview of the mechanical development of several key subsystems of the SWLS. It includes the design and fabrication of the clamps for both lateral and central coils, the development of all thermal components responsible for coupling the cold mass to the cryostat cooling stages, and the construction of the base frame that supports the SWLS cold mass. Additionally, the implementation and testing of Kevlar wires used to suspend the base frame are described. The design of the vacuum chamber through which the beam will pass is also presented, along with the tolerance analysis to ensure the 0.5 mm gap between the coils and the vacuum chamber is maintained. The project also considers the reuse of some parts from a decommissioned Superconducting Wiggler previously operated at the UVX. This article summarizes the ongoing mechanical design and development of the SWLS project.

Footnotes

Funding Agency

Author: ROVIGATTI DE OLIVEIRA, Gustavo (Brazilian Synchrotron Light Laboratory)

Co-authors: Mr SOUZA, Pedro (Brazilian Center for Research in Energy and Materials); Mr JASSO, Thiago (Brazilian Center for Research in Energy and Materials); Mr PILON, Gustavo (Brazilian Center for Research in Energy and Materials); Mr ROCHA, Milton (Brazilian Center for Research in Energy and Materials); Ms CAVAS-SANI, Isadora (Brazilian Center for Research in Energy and Materials); Mr MARTINS, Pedro (Brazilian Center for Research in Energy and Materials)

Presenter: ROVIGATTI DE OLIVEIRA, Gustavo (Brazilian Synchrotron Light Laboratory)

Session Classification: Wednesday Poster Session

Track Classification: ACCELERATORS: Insertion Devices