

Harry Westfahl Junior

An Update on Construction of Sirius, the New Brazilian Synchrotron Light Source

Sirius, the new Brazilian Synchrotron Light Source, is the largest and most complex scientific infrastructure ever built in Brazil and one of the first 4th-generation synchrotron light sources to start operation worldwide. Its 518-m-circumference electron storage ring is based on a 5BA lattice with a (bare machine) horizontal emittance of 250 pm.rad for a 3-GeV beam. A further reduction to 150 pm.rad will be achieved with the extra damping provided by the installation of insertion devices in all straight sections.



The design and construction principles of this new light source were envisaged to optimize production and use of coherent x-rays, with in-house developments ranging from the multi-bend magnetic lattice and modified delta undulators, to high-dynamic active feedback opto-mechanical devices, and fast, low-noise area detectors.

As of May 2018, more than 90% of the building construction is completed, the 150-MeV LINAC is in commissioning, and the installation of components for the booster, storage ring, and the first six beamlines is under way. Commissioning is scheduled for early 2019.

Harry Westfahl, Jr., received his Ph.D. in physics in 1998 from the State University of Campinas, in Brazil, and did postdoctoral training at the University of Illinois at Urbana-Champaign and at the Ames Laboratory. He joined the Brazilian Synchrotron Laboratory in 2001 as leader of the Theory Group. In 2007, he became the leader of the X-Ray Scattering Group and since 2013 he is Scientific Director of the Brazilian Synchrotron Laboratory and coordinator of the project and construction of the Sirius beamlines.

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