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Brazilian Synchrotron Light Source: current results and future perspectives

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The application of synchrotron radiation in a great variety of fields in general, and condensed matter in particular, has increased steadily worldwide. This, to a large extent, is a result of the availability of the much brighter third-generation light sources, which opened up new experimental techniques. Brazil gave an important contribution to science in Latin America through the development of the necessary technology and the construction of the first synchrotron in the southern hemisphere, still the only one in Latin America. The Laboratório Nacional de Luz Síncrotron – LNLS, operates this installation as an open facility since 1997, having today more than 1300 users yearly. Despite all this success, the current Brazilian light source is a second-generation machine, with relatively low electron energy, high emittance and few straight sections for insertion devices. LNLS is currently engaged in the design and construction of a new, third-generation synchrotron light source. It is being planned to be a state of the art machine, providing tools for cutting edge research that are non existent today in Brazil. In this talk an overview of the status of the current Brazilian light source will be provided, illustrated with some experimental results from users, as well as the future perspectives of the new synchrotron source.