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ALBA II accelerator upgrade project status

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ALBA is working on the upgrade project that shall transform the actual storage ring, in operation since 2012, into a 4th generation light source, in which the soft X-rays part of the spectrum shall be diffraction limited. The project was launched in 2021 with an R&D budget to build prototypes of the more critical components. The storage ring upgrade is based on a MBA lattice which has to comply with several constraints imposed by the decision of maintaining the same circumference (269 m), the same number of cells (16), the same beam energy (3 GeV), and as many of the source points as possible unperturbed. At present, the lattice optimization, iterating with the technical constraints of space and performance, is ongoing. This paper presents the status of the project, with the present proposed lattice, the proposed design for magnets, vacuum chambers and girders, the proposed RF system with fundamental and harmonics cavities, and the general context of the upgrade.

Footnotes

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