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Layout of the ALBA II accelerator

Wednesday 17 September 2025 17:00 (1 hour)

ALBA Synchrotron Light Source will be upgraded into a diffraction limited machine by the replacement of the storage ring, which implies the reduction of the emittance by at least a factor of twenty. Compactness ratio of the magnetic elements has increased by a factor of 2. The new lattice has been designed with two constrains. firstly, Keeping the same orbit length allows us to preserve the actual injector. secondly, the medium and short straights will be collinear with respect to ALBA current layout to avoid moving the present ID Beamlines. The bending magnet beamlines must be repositioned on the new machine. Magnetic array, vacuum chambers and girders are positioned with respect to the main orbit under tight clearances, that's why envelope studies of those clearances will have to be performed for the 3 subsystems. Easiness of assembling and installation of the different subsystems of the machine has to be considered also as a design requirement, in order to minimize the installation time A mock-up of one sector is being prepared for this reason. The upgrade will be executed before the end of the decade and will be profiting at maximum all existing ALBA infrastructures.

Footnotes

Funding Agency

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