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PHOTON POLARIZATION SWITCH AT ALBA

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Abstract

The polarization of the synchrotron radiation produced by a bending magnet can be selected by properly choosing the vertical emission angle. At beamlines this can be done by moving a slit to block unwanted polarization: this method is time consuming and not very reproducible. Another option is to fix the slit position, generate a local bump with the electron beam, and vary the emission angle at the source point such that the sample is illuminated with the desired polarization. At ALBA, we have implemented this option within the Fast Orbit Feedback, which allows to perform the angle switch in less than one minute without affecting other beamlines. This report describes the implementation of this technique for the dipole beamline MISTRAL at the ALBA Synchrotron.

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