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Beam size measurement developments at SLS

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Advancements in low-emittance x-ray sources have required the exploration of various diagnostic techniques to push the resolution limit. Here we will present the two techniques to measure the size of the electron beam using X-rays: zone plate transmission microscope and a multi-crystal diffraction-based beam property analyzer. Both techniques have been tested at the Swiss Synchrotron Light Source (SLS), with encouraging results. With the zone plates, it is possible to measure the beam profile in 2D simultaneously. However, with the diffraction-based method, only the vertical beam size was measured. We have built and tested a diffraction-based system that is able to measure the beam size in both dimensions. This concept was also built to be compact and does not require long x-ray beamlines such that it could afford beam size monitoring for light sources with limited space.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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