

## **Focusing hard X-rays with profile-coated mirrors**

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We report our progress in simulating the focusing of X-rays by elliptical mirrors, using wave-optical calculations. The simulations take into account the phase change of coherent hard X-rays on propagation and reflection from a mirror surface, which is described using microstitched interferometry data.

Profile-coated mirrors can be routinely fabricated with RMS residual height compared to the best-fit ellipse of the order of Angstroms. Simulated intensity profiles, and contours (isophotes) around the focal plane of such mirrors will be presented for coherent illumination by a 15 keV point source, which predict diffraction-limited focusing. The correspondence between the simulated results and the experimental focusing performance of the mirrors will be discussed.

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