A HIGH PERFORMANCE COLLIMATOR FOR SMALL ANGLE X-RAY SCATTERING USING A MONOCAPILLARY WITH A PARABOLOIDAL PROFILE.

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A new type of collimator has been developed for small angle X-ray scattering. This uses a monocapillary optic with a paraboloidal internal profile to produce a singly-reflected parallel beam with less than 1 milliradian divergence and 1 mm diameter from an 0.1 mm x 1.0 mm X-ray focus. This optic produces more than an order of magnitude more intensity at the specimen whilst also suppressing short-wavelength “white” radiation.