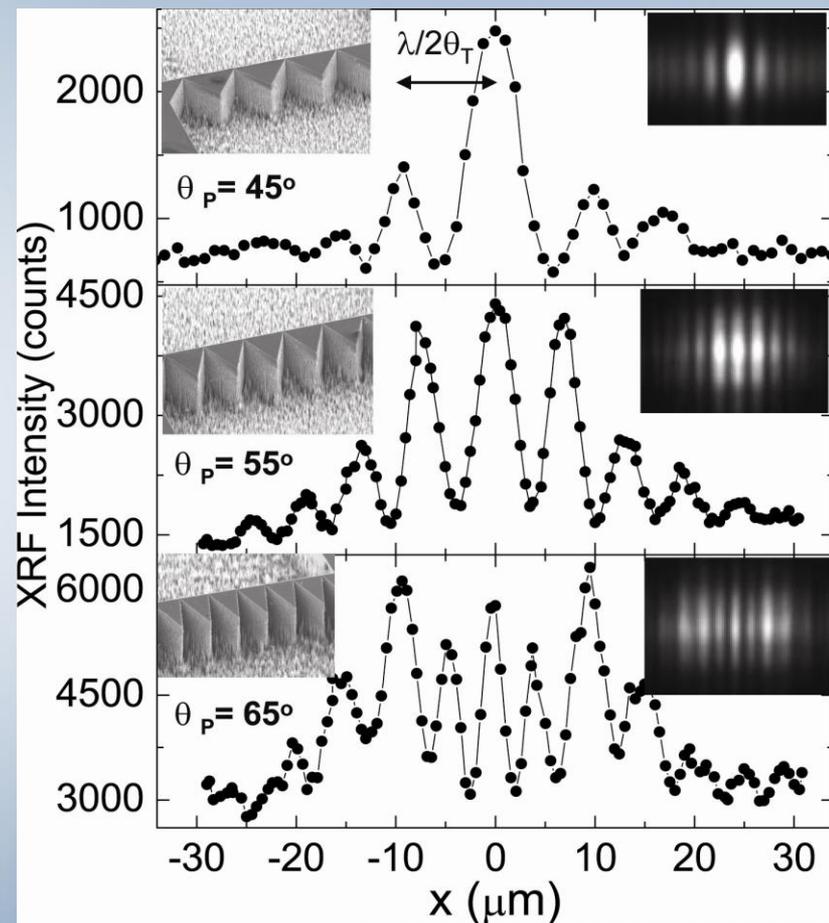


A virtual Young's double slit experiment from a silicon bi-prism interferometer

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- Using silicon micro-fabricated prisms we have performed a virtual Young's double slit experiment.
- The bi-prism creates two virtual sources from a single real source that interfere, and the resulting fringe pattern is quantitatively probed with fluorescence from a 30nm film.
- The insets in the left column of the Figure are Scanning Electron microscope images of silicon bi-prisms, with varying bi-prism angles of 45, 55 and 65 degrees. The insets on the right of the Figure are images of the resultant interference fringes taken with a fluorescent YAG screen. In the center column of the Figure, the dots are quantitative intensity measurements of the interference field, taken by monitoring the fluorescence counts from a 30nm Cr film that is scanned through the fringes field. The lines that go through the dots are a fit to the data, as described in the publication
- One application is to characterize the quality of beamlines, but there may be other imaging applications



"A bi-prism interferometer for hard X-ray photons", Isakovic, A. F., Stein, A., Warren, J. B., Sandy, A. R., Narayanan, S., Sprung, M., Ablett, M., Siddons, D. P., Metzler, M. and Evans-Lutterodt, K., *J. Synchr. Rad.*, **17**, 451-455, (2010)