

# Soft X-ray Coherent Imaging of Magnetic Textures

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Soft x-ray imaging is a key method in the field of magnetism, offering exceptional spatial and temporal resolution, quantitative contrast, and the ability to investigate devices under operando conditions. Image contrast arises from strong dichroism at or near the elemental resonances. Coherent imaging is particularly attractive as it promises enhanced resolution and sensitivity. In this technique, raw scattering data is recorded with a camera and numerically converted to a real space image. One of the major challenges in this field is to obtain accurate (noise-free) measurements of the intensity at each pixel, to cope with the enormous dynamic range of the signal, and to not damage the detector with the direct beam. I will discuss these challenges and the opportunities that arise from new detector technologies in this context.

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