

Spatio-temporal migration of antiferromagnetic domain walls in Sr_2IrO_4

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SUPPLEMENTARY FIGURES

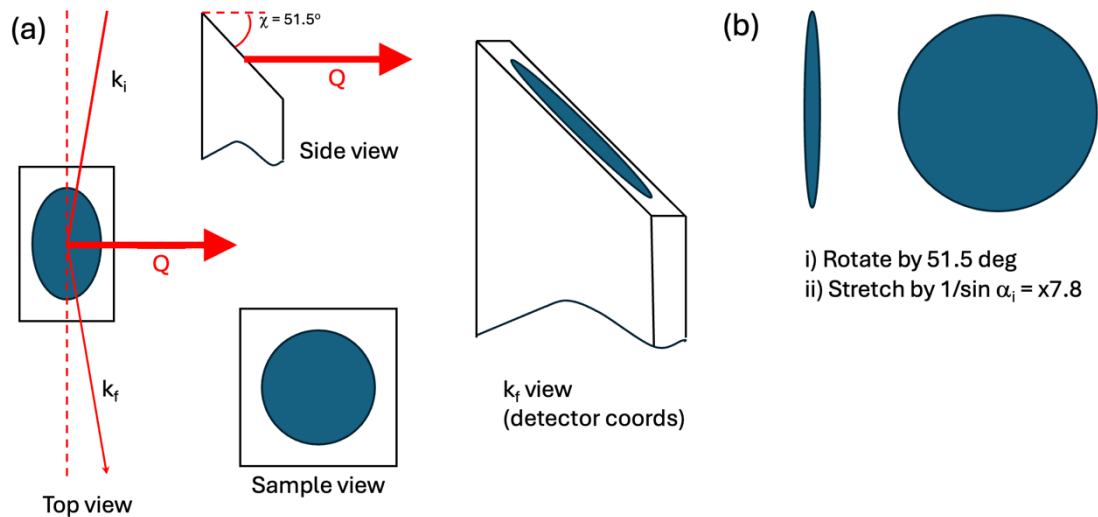


Figure S1: (a) Diffraction geometry of the X-ray setup at the MID instrument of XFEL. The Q-vector lies in the horizontal plane, and the sample face is tilted by 51.5° to reach the 106 reflection (b) coordinate transformation required to convert the reconstructed image from the detector view into the surface-normal view.

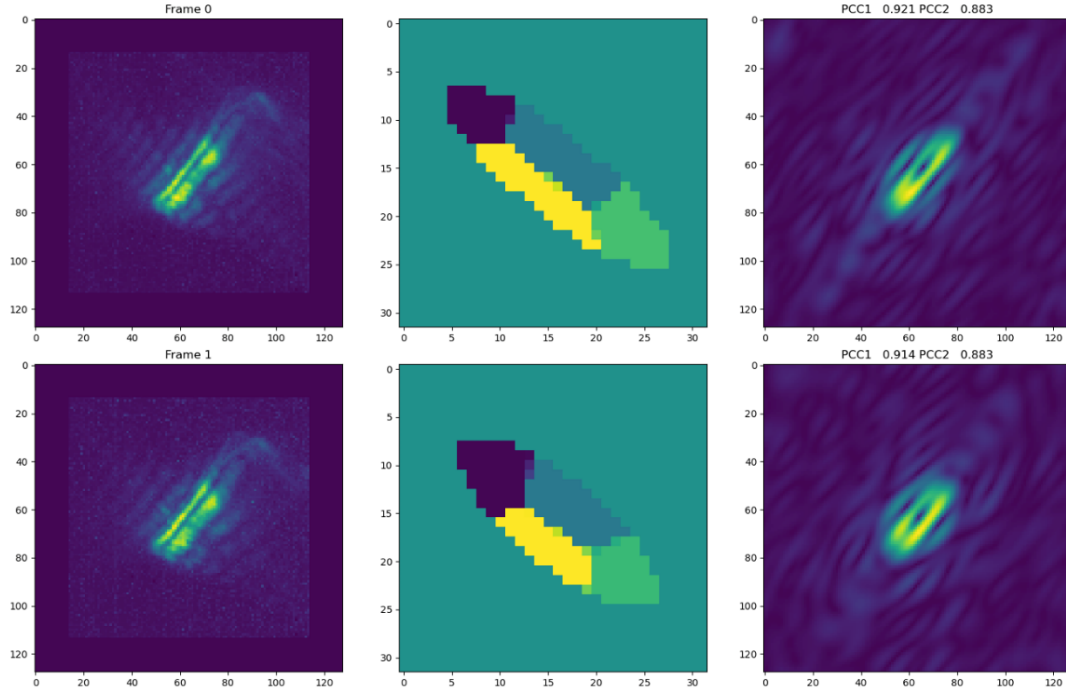


Figure S2: Fitting of the 4-domain model to the XFEL magnetic coherent diffraction data summed over ranges $-5 \text{ ps} < \Delta t < 0$ (frame 0, top) and $0 < \Delta t < +5 \text{ ps}$ (frame 1, bottom). The first column is the measured diffraction amplitude, the second column is the fit model colored according to the values of the phases and the third column is the best-fitting diffraction amplitude distribution.

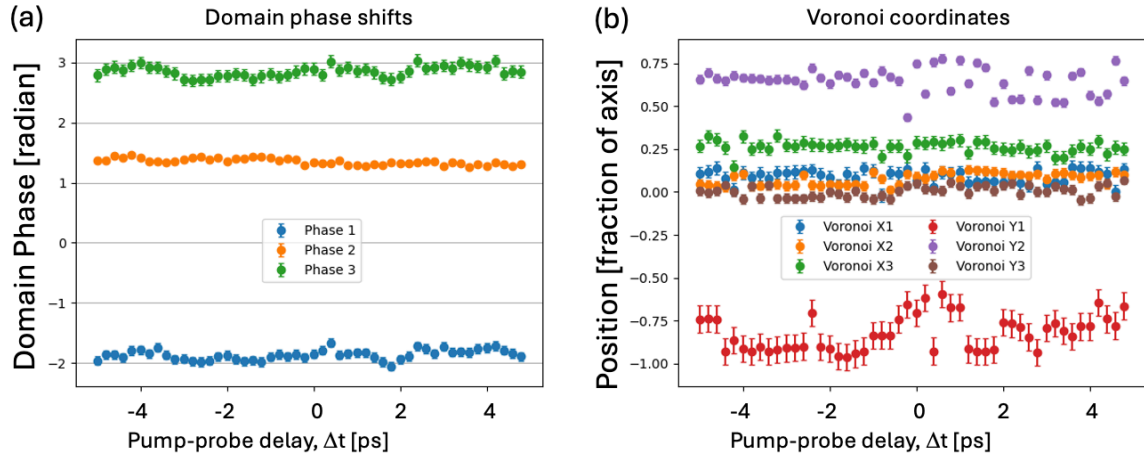


Figure S3: Time dependence of the other parameters of the model listed in Table 1, used to fit the diffraction pattern. (a) Domain phase shifts. (b) Voronoi (x,y) coordinates as a fraction of the axis length of the ellipse, as listed in Table 1. The fourth domain is fixed at (0,0) with a phase of 0.