

SAIP2014



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Ptychographic reconstruction of temporal objects

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Abstract :

Ptychography a technique used in the X-ray regime to reconstruct objects in space with atomic scale resolution by recording the far field diffraction patterns after translating either the illumination source with respect to the object or the object itself can be readily applied in the optical regime to reconstruct so called temporal objects by interacting a temporal object with a probe pulse in a sample. The spectrum is recorded after shifting the probe pulse in time. In the analogy, the recorded spectra is equivalent to the recorded far field diffraction pattern and the temporal shift is equivalent to the translation of the object or beam. The novelty of this technique is that one is able to resolve detail of the temporal object which is much shorter than the probe pulse. We present the ptychographic iterative method for reconstruction in the optical regime and show the results from our experiments.

Award :

yes

Level :

PhD

Supervisor :

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Paper :

No

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