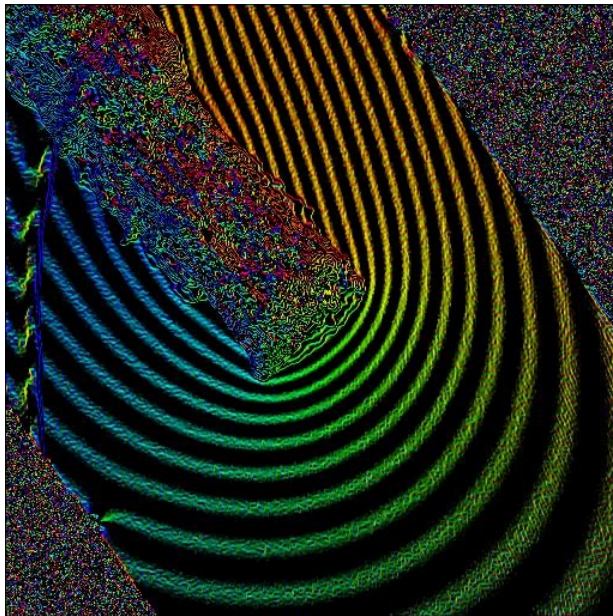


qHolo – Quantitative holography

Quantifying off-axis electron holography

qHolo provides all the tools you need to carry out off-line quantitative analysis of off-axis electron holograms with the highest precision. In particular, qHolo was designed for the analysis of magnetic [1,2] and electric fields [3,4].



For at-the-microscope help with holography, please use the *HoloLive* module dedicated to live reconstruction of the phase during experiments.

Key Features

- ◆ Phase reconstruction using the Fourier transform method
- ◆ Automatic side-band detection
- ◆ Carrier frequency refinement via reference area
- ◆ Distortion correction via a reference hologram
- ◆ Phase unwrapping
- ◆ Separation between magnetic and electric fields
- ◆ Vector field visualization tools

References:

- [1] C. Gatel, B. Warot-Fonrose, N. Bizière, et al., Nature Communications. 8, 15703 (2017). Inhomogeneous spatial distribution of the magnetic transition in an iron-rhodium thin film.
- [2] N. Bizière, D. Reyes, T. L. Wade, B. Warot-Fonrose, C. Gatel, J. Appl. Phys. 126, 163906 (2019). Multi magnetic states in Co/Cu multilayered cylindrical nanowires studied by combination of off-axis electron holography imaging and micromagnetic simulations.
- [3] M. Brodovoi, K. Gruel, A. Masseboeuf, L. Chapuis, M. Hÿtch, et al., Appl. Phys. Lett. 120, 233501 (2022). Mapping electric fields in real nanodevices by operando electron holography.
- [4] L. Zhang, M. H. Raza, R. Wu, K. Gruel, C. Dubourdieu, M. Hÿtch, C. Gatel, Advanced Materials 37, 2413691 (2024). Quantification of interfacial charges in multilayered nanocapacitors by operando electron holography.

