

Gigascale electron event processing for band structure mapping

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Mapping of the electronic band structures of materials using momentum microscopy requires processing single-electron events of a few to hundreds of gigabytes. We construct a flexible computational workflow that allows user interaction with billion-count single-electron events in these band mapping experiments. We demonstrate its compatibility with large facility and tabletop experimental setups. The workflow is open source and offers an end-to-end recipe from data source to database. Both the workflow and processed data can be archived for reuse, providing the infrastructure for documenting the data provenance for high-throughput materials characterization.

Poster title

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