darfix: Data analysis for dark-field X-ray microscopy

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A Python package for the analysis of dark-field X-ray microscopy (DFXM) data is presented. *darfix* provides a set of data processing and visualization tools that can be either imported as library components or accessed through a graphical user interface (GUI) as an Orange add-on. In the latter case, the different analysis modules can be easily chained to define computational workflows—only tree structures are supported—that run concurrently. Operations on larger-than-memory image sets are supported through the implementation of online versions of the data processing algorithms, effectively trading performance for feasibility when the computing resources are limited. The software can automatically characterize the relevant instrument angle settings by analyzing the input files metadata. The currently available input file format is EDF and in future releases HDF5 will be incorporated.