Dioptas 0.6.0: a visualization and integration software for high data rates at XRD beamlines

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Abstract:
In this presentation, I will introduce the software Dioptas and its latest new features. Since its initial release a decade ago, Dioptas has become a one of the most widely used programs for 2D XRD data processing at high-pressure synchrotron beamlines. Initially designed for rapid data exploration during beamtime, Dioptas allowed researchers to focus more on experimental interpretation and results. However, early versions were suited for data collection rates of approximately one diffraction pattern per second.

With the advent of fourth-generation synchrotron facilities and X-ray free-electron lasers, data acquisition rates have significantly increased, necessitating enhanced software capabilities. In collaboration with DESY, we have developed a new batch mode in Dioptas, enabling efficient visualization and exploration of large datasets. Additionally, the latest release includes a preliminary implementation of a map mode, similar to the features included in XDI, a widely used software written by Ross Hrubiak, with the added advantage of visualizing different phase lines and overlays.

I would also like to take this opportunity to initiate a discussion of the community's needs for future development directions. Here is a link to tutorial data:
https://www.dropbox.com/scl/fo/0ixqzq9q988zhvebiirq0/AKSkpZalPlC0Dm_daPNjNA0?rlkey=x3inxvbuu4aq38qmxnsvbcev3&st=poqzeeth&dl=0