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Using the CBF Library for Real-Time Image Analysis

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Standardization of the crystallographic image format has the potential for making data processing software much more portable. *LABELIT*, the LBNL autoindexing toolbox, currently supports data formats produced by most equipment vendors, but the many *ad hoc* rules required to implement this support make the code difficult to maintain. The present goal is to utilize the CBF library for image processing at the earliest possible date. C++ wrapper code will be written to encapsulate the existing C-language CBF library. This will in turn be exposed at the Python-language level (using Boost.Python) so that CBF functionality can be accessed within a scripting environment. Both the C++ and Python APIs will be made available through the Computational Crystallography Toolbox, currently freely downloadable at sourceforge.net. Once this infrastructure is in place, it will be possible to treat CBF-formated images within a data processing pipeline, such as that offered by Stanford's *Web-Ice* package. This allows image characteristics to be immediately analyzed and reviewed, to optimize the experimental protocol.