DiffracPlus: Eva

Eva helps you solve diffraction problems, then produce high quality printed documents to share your results with others. Files collected with DIFFRAC-AT or DIFFRACplus are directly compatible with Eva (you can import them directly into an Eva document). Data sets from other origins must be converted before importing them. Xch, a standard DIFFRACplus component, can convert most ASCII measured data sets into suitable .RAW files. Eva modifies measured data sets (for example, by smoothing them or subtracting their continuous background). Eva can also export modified raw files for use as input by other tasks. Scans are displayed as continuous traces in Eva

Reference patterns are stored in powder diffraction databases in DIFFRAC-AT or DIFFRACplus format, and displayed by Eva as stick diagrams. The powder diffraction file (PDF) is the sole scientific database for powder diffraction data. It is the intellectual property of the International Centre for Diffraction Data (ICDD)– International Centre for Diffraction Data. This organization makes the PDF database available under license agreements. PDFMaint (another DIFFRACplus component) compiles the complete ICDD's PDF in our format, searches the database to retrieve and display the relevant information, and creates user patterns (patterns of proprietary or new materials). Eva displays the reference patterns as stick diagrams, but can also display their numerical data exactly as PDFMaint does.

Eva can find a reference pattern by its name or number, or by a search/match process, which tries to identify an unknown scan using a set of reference patterns scaled to take the matched intensities into account. Searching, which is based on pattern recognition techniques, runs automatically in a few seconds and delivers a list of best results for you to check. Matching is an interactive process: you accept or reject each proposed reference pattern based on graphical compatibility between the unknown scan and reference pattern, and based on compatibility with knowledge of the sample (origin, chemistry, preparation, etc.). Because it is not of interest for all users, Search/Match is optional (when not purchased, it is disabled). A set of peaks located by Eva can also become a pattern (called a DIF pattern) and is displayed exactly like any reference pattern. Patterns are displayed as stick patterns in Eva. Peaks are the result of peak search treatment on scans. You can determine the peak list before transferring it as a pattern, or export the list as a file (.DIF) which can be imported by another Eva document or other programs such as Win-Metric (Bruker AXS' cell refinement program). You can select whether to display d, 2q, and/or intensity on the peaks.

Eva lets you calculate the net intensity, full width at half maximum (FWHM), and many other meaningful values of a selected area. This set of results is called an area. Area computation can be performed on all regions of interest. Results are stored in the area list. Two other DIFFRACplus components can perform similar operations: DQuant (quantitative analysis using preset angular regions), and Profile (profile fitting which can separate unresolved line clusters in single lines).

In Eva, you can display 3D data in a X-Z view, called Level view. A Level gives the Y-value of an iso-intensity curve. When in the Level view, a contour of an iso-intensity tends to be one point, it is clearly because it corresponds to a local maximum on the 3D data. Such local maximums are called Maximums and can be located automatically in the Level view. For seek of simplicity, Maximums and Levels are both listed under Level in the main toolbox, but are displayed with different icons. The look and handling of Maximums are similar to the ones of Peaks, but for 3D data instead of 2D data.

http://www.bruker-axs.com/Products/diffrac.html

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