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The Fortran90 source code of the program *PSILAM* has been deposited with the IUCr.

1. Introduction

To facilitate further developments and improvements of analysis in the field of kinematical multiple diffraction, the Fortran90 source code of the program *UMWEG* (Ro-03*b*, Ro-06*a*)[1] was given in succeeding papers (Ro-06*b*, Ro-06*c* and Ro-07). This paper presents the central program units of the program *PSILAM* (Ro-03*a*), which is a derivative of *UMWEG*, and the corresponding PostScript-plot software routines that have been deposited as supplementary material.[2] The corresponding 'true crystallographic' subroutines of *PSILAM* are identical to those of *UMWEG* (see Ro-07-§3) and can therefore be obtained from the above-mentioned papers.

2. The central program units of *PSILAM*

The Fortran90 sources of the central subroutine *PSILAM* are available, for non-commercial use only, from the deposited material (file `psilam.f90`). The file also contains the module *INTENSITY DATA*. At the end of the file, the short main program of the command-line version of the program *PSILAM* is included. Also deposited is the input description (file `input_help.txt`).

3. The PostScript-plot subroutines

Using a collection of PostScript-plot software subroutines, the graphical output of the program *PSILAM* is generated and saved as a PostScript file. These routines can be downloaded, for non-commercial use only, from the deposited material (file `psilam_plot.f90`).

4. Concluding remarks

Kinematical single and multiple diffraction takes place inside perfect crystallites. The theory underlying the programs *UMWEG* and *PSILAM* was therefore developed and published for non-absorbing extinction-free ideal perfect spherical crystals.

The unpublished expressions used in *UMWEG* and *PSILAM* for the correction of absorption effects, primary extinction and mosaicity of the crystal, represent very first attempts, capable of improvement (see Ro-07-Appendix *A*). They have to be reconsidered and replaced by more sophisticated approaches.

[1] Most of the expressions and figures discussed in this paper were derived or presented in previous papers of the author. These expressions, figures, Appendices, *etc.*, will be referenced in the following by the abbreviation Ro-*xxy*-(*z*), where *xx* represents the two last digits of the year of publication, *y* stands for *a*, *b*, *c etc.* if more than one paper in the respective year is referenced, and *z* represents the number of the equation, figure, Appendix, *etc.*, under consideration.
[2] Available from the IUCr electronic archives (Reference: FE5017). Services for accessing these data are described at the back of the journal.

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