

Teaching Edition of International Tables for Crystallography: Crystallographic Symmetry

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The aim of this contribution is to present briefly the new sixth edition of the Teaching Edition of *International Tables for Crystallography* [1]. The presentation will be illustrated with examples of the *Symmetry Database* (<https://symmdb.iucr.org/>) which forms part of the Online edition of *International Tables for Crystallography* and gives access to databases of crystallographic point and space groups.

The Teaching Edition (hereafter referred to as TE) is a successor of the previously known *Brief Teaching Edition of Volume A* (last revised in 2005) although the new material, substantial revisions and reorganization of the text, has resulted in a book, quite different in structure and contents to its predecessor. It focuses on the particular topic of symmetry owing to its fundamental role in crystallography, and provides a unified and coherent introduction to the symmetry information found in the three volumes of *International Tables for Crystallography*: the basic crystallographic data of plane and space groups in Volume A (*ITA*), the symmetry relations between space groups treated in Volume A1 (*ITA1*), and the subperiodic group data in Volume E (*ITE*).

Part I of the TE is based on the material of the Introductory Part of the sixth edition of *ITA* completed with explanations and illustrative examples to provide the reader with practical experience in the use of the crystallographic symmetry data. The material of the introductory part is complemented by a brief presentation of magnetic crystallographic symmetry and the *Symmetry Database*. The second part of TE focuses on the presentation of the tabulated symmetry data of *ITA*, *ITA1* and *ITE* and includes a selected set of tables of the full volumes of varying complexity useful for teaching of crystallographic symmetry.

The Teaching Edition is designed for graduate students (and post-graduate students) and young researchers who have some awareness of the basics of symmetry and diffraction, and who need to use crystallographic symmetry methods in their work. The clear and precise text is supplied with sufficient, up to date and accessible references to further specialized sources for those who need to go deeper into the subject, and to textbooks and basic crystallographic literature that could be helpful for those who need a course in basic crystallography or introduction to the mathematics that is required. The fruitful combination of tables for practical use and a didactic introduction to symmetry makes this TE a handy tool for researchers and students to familiarize themselves with the use of crystallographic symmetry and its practical applications.

[1] *International Tables for Crystallography* (2021), Teaching Edition: Crystallographic Symmetry. Edited by M.I. Aroyo, 6th edition. Chichester: John Wiley & Sons, Ltd.

