

Groups). 7. The 230 Space Groups. Part II: Symmetry in Crystallography. 8. Introduction to Space-Group Symmetry. 9. Crystal Lattices. 10. Point Groups and Crystal Classes. 11. Symmetry Operations. 12. Space-Group Symbols and Their Use. 13. Isomorphic Subgroups of Space Groups. 14. Lattice Complexes. Subject Index.

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Copies of all these publications may be ordered direct from the publisher, D. Reidel Publishing Company, PO Box 17, 3300 AA Dordrecht, The Netherlands, from Polycrystal Book Service, PO Box 27, Western Springs, Illinois 60558, USA, or from any bookseller.

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Crystallographic Statistics

The Twelfth International Congress of Crystallography, held in Ottawa in 1981, included for the first time a session entirely devoted to crystallographic statistics. Eight papers were presented at the session, and there were several papers on related topics presented in other sessions. Fifteen of the papers have now been published by the Indian Academy of Sciences at a very attractive price. In most

cases the texts have been expanded by the authors from the versions presented at the Congress; three papers published in full elsewhere are represented by extended abstracts. The contributions (abbreviated titles) are: *Introduction* by A. J. C. Wilson; *Crystallographic Statistics – General Review* by H. Hauptman; *Bayesian Statistics – An Overview* by S. French and S. Oatley; *Intensity Statistics – Survey, Computer Simulation and the Heavy-Atom Problem* by U. Shmueli; *Non-Ideal Distributions in Theory and Practice* by U. Shmueli and A. J. C. Wilson; *The Probability of Validity of Phase Relations* by G. B. Mitra and S. Ghosh; *Effects of Heavy Atoms and Symmetry* by G. D. Nigam and S. Ghosh; *Measurability of Bijvoet Differences* by S. Parthasarathy; *Non-Independence* (Editorial comment); *Statistics of Recorded Counts* by J. L. de Boer; *Alternatives to R Tests* by S. M. Rothstein; *Residual R₂ as a Discriminator Criterion* by A. T. H. Lenstra; *Alternatives to Least Squares* (Editorial comment); *Robust/Resistant Technique for Refinement* by W. L. Nicholson, E. Prince, J. Buchanan and P. Tucker; *Statistical Errors and Series Termination in Electron Density* by A. A. Shevryev and V. I. Simonov; *Data Reduction and Error Analysis* by R. H. Blessing and G. T. DeTitta; *Secondary ‘Least-Squares’ Minima* by R. Rothbauer; *Wiener Methods for Electron Density* by D. M. Collins and M. C. Mahar. The indexes occupy 13 pages.

Orders for *Crystallographic Statistics: Progress and Problems*, edited by S. Ramaseshan, M. F. Richardson and A. J. C. Wilson (Pp. iv + 313), should be sent to the Indian Academy of Sciences, Bangalore 560 080, India and be accompanied by a remittance. The prices (including postage – surface mail – anywhere in the world) are US \$18.00; £9.00; R (Indian rupees) 50.00 (full rate) and US \$9.00; £5.00; R (Indian rupees) 25.00 (reduced rate for individuals; copies purchased at reduced rate should not be passed to libraries).

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (J. H. Robertson, School of Chemistry, University of Leeds, Leeds LS2 9JT, England). As far as practicable books will be reviewed in a country different from that of publication.

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Nonlinear phenomena at phase transitions and instabilities. Edited by R. RISTE. Pp. xii + 481. New York: Plenum, 1982. Price US \$59.50.

This book is composed of a collection of manuscripts representing twenty-eight papers presented at a NATO Advanced Study Institute held in Geilo, Norway, 29 March–9 April 1981. It is very similar in format to an earlier work, also edited by Professor Riste, summarizing a similar NATO Institute, *Ordering in strongly fluctuating condensed matter systems*.

The concept of the non-linearity of systems for certain phase transformations was introduced over ten years ago. Efforts, both theoretical and experimental, expended over the ensuing decade to elucidate the nature of these non-linear

phenomena form the subject matter of this book. More than one-third of the lectures at the Institute were designed to be of an extended, tutorial nature. The purpose of these invited papers was to develop the necessary background material and to introduce some of the problem areas to be covered in the shorter, more specific research papers. The ten invited papers dealt with the topics of theory and anharmonic properties of structural phase transitions, non-linear excitations, including thermal convection, turbulence, and other instabilities in both solid and hydrodynamical systems, two-dimensional melting, and the phenomena of crystal growth.

An example of the excellent interaction between the ‘tutorial’ and the ‘research’ sections of the book is provided by the ‘soliton’, a concept introduced several years ago as a