

Book Selection

Edited by RICHARD EGGLESE and MIKE PIDD

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Generation and Application of Pseudorandom Sequences for Random Testing

V. N. YARMOLIK and S. N. DEMIDENKO
Wiley, Chichester, 1988. 167 pp. £25.50
ISBN 0 471 91999 3

This text, originally published in Russian, deals with the question of how pseudorandom sequences can be generated, and their use in automated testing systems. The authors are respectively from the Minsk Radio Engineering Institute and the Institute of Engineering Cybernetics, and the intended readership appears to be mathematically literate engineers.

Three of the five chapters concern the generation of pseudorandom number sequences. The first defines, and proves various results about, linear congruential sequences and M-sequences. The next two develop the theory and computational aspects of M-sequences.

The fourth chapter discusses the application of pseudorandom sequences to control test equipment, for example in testing machinery under simulated vibration and stress. The fifth chapter considers the use of randomized test patterns for digital devices.

The book is well set out, and the translation appears fluent. It makes no concessions to the non-mathematical reader—perhaps Russians are better educated that way? There is a list of over 100 references, many from English-language journals. Thus it should be useful to anyone intending to work intensively in the field of randomized testing; but it is not for those of us with merely a casual interest in where the random numbers in our simulations come from.

C. M. HARBOTTLE

Computer Integrated Manufacturing: The Data Management Strategy

OLIN H. BRAY
Digital Press, Bedford, MA, 1988. 341 pp. US\$45.00
ISBN 1 55558 010 6

The scope of this book is ambitious. Data-modelling is a subject on which long books have been written, and whole libraries exist on computer-aided design and manufacture. Thus the author's claim to provide a comprehensive approach to manufacturing in 340 pages must be met with caution. What Olin Bray does is to provide a very cogent summary of CAP, CAM and CIM and to show the vital importance of data-modelling to systems design.

In two chapters the author sets out the concepts of database management and database design. This is followed by 10 chapters, each of which describes an issue of design or manufacture and explains how the database design methodology can contribute to this issue.

The first three chapters are devoted to describing computer-aided design and manufacture, how computer-integrated manufacture is the next synthesis of these and the importance of data in its structuring to give information in CIM systems.