V. Korotkich, *A Mathematical Structure for Emergent Computation.* Dordrecht – Boston — London: Kluwer Academic Publishers, 1999. xvi + 164 p. prijs fl. 160,– (hc) (Nonconvex Optimization and Its Applications, Volume 36) ISBN 0-7923-6010-9.

This monograph, based on six recent papers by the author, deals with a mathematical structure, called integer code series, which is a coding for piecewise constant functions on the integers. Then another structure, called web of relations, is introduced. The author claims that this approach is suitable for describing certain phenomena mathematically as a whole. Within this "holistic" setting, certain algebraic and geometric observations are made, issues like integer sequences (Prouhet-Thue-Morse, Fibonacci), emergent computations and dynamical systems (chaos, period doubling) are addressed, and a notion of structural complexity is given.

I am afraid that the author's approach is rather isolated and that this monograph will probably not change that situation. This book is anything but a pleasure to read: it is often vague, poorly written and employs incorrect formulations. A typical example, taken from p. viii: "[The author] started to study questions concerning universal principles of emergent computation as a reaction to the general realization that the NP-complete problem [!] probably could not be practically solved by using the Turing model of computation." It also contains overloaded notation (apart from the structural complexity $C(s)$ there is also a function $C(s, s')$ and even a function $C(s(i), s'(i), i).$), and it has no index. The order of the references is not alphabetical and although this volume deals with structural or descriptive complexity it does not refer to the standard text by M. Li & P.M.B. Vitányi, *An Introduction to Kolmogorov Complexity and Its Applications* (1993), Springer-Verlag. What this monograph has to do with Nonconvex Optimization remains an open question.

In short, I cannot recommend this book to anybody. *P.R.J. Asveld*