

another example is the introduction, without explanation, of the variables x_h^M and x_h^m on page 89. It is only after reading several pages on that one becomes aware of the intent of these variables. In a slightly different vein, Appendix II starts with the following paragraph:

This Appendix describes the architecture of a specific optimizing compiler in which the order of the various analyses is based on pragmatic considerations of the algorithmic source language. A modification of the order of the analyses might be more appropriate for languages of a different type.

However, nowhere is it stated what language is being compiled by this compiler, nor are any references given which might enable the reader to identify either the language or the compiler. Since the author states that the language is a major consideration in the design, the omission seems inexcusable.

It should also be noted that much of the material in Part II is given informally in English, in the form of general heuristics for the writer of an optimizing compiler. While this material is useful, it does not bear the slightest resemblance to a mathematical theory.

In summary, this book can be useful as a compendium of techniques, but it does not develop any unifying principles. For a mathematician, it is unlikely to be of much interest. For a compiler writer, it can serve as a useful source of ideas. On account of its muddy explanations and careless editing, however, it just is not worth the effort of a close reading.

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47 [13.15].— ANDREW B. TEMPLEMAN, Editor, *Engineering Optimization*, Vol. 1, No. 1 (1974); Gordon & Breach, New York, 1974, 69 pp., 26 cm. Price \$15.00 for individuals, \$52.00 for institutions.

Recognition of the common interest of differing branches of engineering in optimization has prompted the founding of this interesting journal. Although not excluding the publication of "technique" papers which concentrate on algorithms for solving narrowly-stated or algebraically-described optimization problems, the main emphasis will be on the formulation of optimization models and experiences in solving them using existing techniques. Perusal of the first issue shows a breadth of concern from the purely practical ("The cost of obtaining the final design is as significant as the optimality of the final design") to such theoretical/practical considerations as the sensitivity of the optimal design to errors in bounding moments given by plate finite element analysis. The journal should be particularly valuable as a source of case studies and examples of optimization for classroom use. A list of the papers in the first issue is: "The application of optimization techniques in the professional practice," "The optimum design of concrete structures," "Optimality conditions for trusses with nonzero minimum cross-sections," "Heuristic approaches to road network optimization," "The CIRIA optimization study of sewage treatment," "Michell framework for uniform load between fixed supports," and a particularly fine introductory article by the editor, A. B. Templeman, "*Engineering Optimization—scope and aims.*"

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