

compactness arguments. The uniqueness result is confined to conditions very close to thermal equilibrium and is obtained via the implicit function theorem.

Chapter 4 describes the approach to this problem via singular perturbation theory. This is the best chapter in the book, hardly surprising in view of the research interests of the author. There is a very nice theorem showing how the singular perturbation construction approximates the electrostatic potential function associated with a thermal equilibrium solution. Unfortunately, such results have not been obtained for the full system corresponding to nonzero applied voltages. Indeed, the treatment of the current continuity equations is limited essentially to one dimension.

Chapter 5 discusses approximation methods. Unfortunately, the discussion is primarily a derivation of the commonly used methods, not containing convincing convergence proofs. There is a very good discussion, however, of the difficulties occurring when the simplest centered averages are used for the carrier densities in the continuity equations.

This book is a good complement to that of S. Selberherr [1], providing much of the needed detail of the mathematical methods, particularly the discretization methods. I expect that it will be helpful indeed to a considerable number of readers.

MICHAEL SEVER (Mock)

Department of Applied Mathematics
The Hebrew University of Jerusalem
Givat Ram
Jerusalem, Israel

1. S. SELBERHERR, *Analysis and Simulation of Semiconductor Devices*, Springer-Verlag, Vienna and New York, 1984.

25[65–06].— D. F. GRIFFITHS & G. A. WATSON (Editors), *Numerical Analysis*, Pitman Research Notes in Mathematics Series, Vol. 140, Longman Scientific & Technical, copublished in the U.S. by John Wiley, New York, 1986, vi + 262 pp., 24 cm. Price \$24.95.

These are the proceedings of the 11th Dundee Biennial Conference on Numerical Analysis held at the University of Dundee June 25–28, 1985. They contain the complete versions of 16 invited lectures, as well as the titles of 80 contributed talks. The range of topics covered is quite broad.

W. G.

26[53–01, 68U05].— J. A. GREGORY (Editor), *The Mathematics of Surfaces*, The Institute of Mathematics and its Applications Conference Series, Vol. 6, Clarendon Press, Oxford, 1986, xi + 282 pp., 24 cm. Price \$49.00.

From the Preface: “This book contains the proceedings of the conference ‘The Mathematics of Surfaces’ organized by the Institute of Mathematics and its Applications and held at the University of Manchester from 17th–19th September, 1984.

The main aim of the conference was to consider mathematical techniques suitable for the description and analysis of surfaces in three dimensions, and to consider the application of such techniques in areas such as ‘computer-aided geometric design’.