

nonlinear systems described by van der Pol's equation.

Appendix D, "The craft of the physicist," is a typically exemplary feature. This Appendix lists what I shall call "prescriptions for success in problem solving," and cites locations in the text that illustrate particular strategies. There are a large number of excellent problems. While Baierlein gives you an intuitive feeling for a topic, he does not spare the teaching of analytical techniques.

Baierlein consistently organizes material in ways it would be learned best. In the first chapter, rather than listing scalar and vector operations, he ties the properties of these operations to applications of physical law, including the implications of invariance under space translation, rotation, and time translation. He provides an excellent introduction to nonlinear oscillators as early as chapter 3. He introduces Lagrange's equations by means of Hamilton's principle, which is more logical than starting with D'Alembert's principle and then transforming to generalized coordinates. In addition, he smooths the way by an early introduction of Fermat's principle.

Even while the book is effective in teaching, it is not a text for the faint of heart. There is no customary reminder of what students learned in an introductory course. It is instead a very sophisticated and concise text. At times, topics seem to fly by. For examples, there is no chapter on rigid bodies; in the chapter on extended bodies in rotation, Baierlein calculates the moment of inertia for a sphere from the inertia tensor.

I recommend the adoption of the book most highly for an advanced course in mechanics. For an intermediate course, you will want to add it to your reserve list, recommend various chapters to your students, and definitely add this book to your reading list.

PHYLLIS J. FLEMING
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Advances in Magnetic Resonance. Vol. 11. J. S. Waugh. 282 pp. Academic, New York, 1983. \$49.50

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Principles of Nuclear Magnetism. *International Series of Monographs on Physics*. A. Abragam. 599 pp. Oxford, New York, 1983. \$29.50 paper. text

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