Vibrations Non Linéaires et Théorie de la Stabilité, by M. Roseau. Springer-Verlag, Berlin, 6 Heidelberg, 1966. xi + 254 pages.

At first glance it might appear from the title that this is another study of stability theory for nonlinear differential equations, a subject already fairly well covered by a number of recent books. However, a closer examination shows that three fourths of the book deals with topics such as perturbation methods, orbital stability, synchronization, and periodic and almost periodic systems. These topics have received relatively little attention in most recent books, although those by Bogoliubov and Mitropolski, Hale, and Minorsky should be mentioned as exceptions.

The first seven chapters develop the basic theory of linear systems of differential equations, existence theory for nonlinear systems, and Lyapunov's second method. The treatment is quite concise, but readable, and forms a satisfactory introduction. There are, however, some places where a neater formulation could be given (example: the proof of uniqueness of solutions in section 2.2).

The remainder of the book is, as already indicated, devoted to less standard material. A recurring theme is the question of existence and stability of periodic solutions. The presentation given here is useful, particularly in view of the relative scarcity of books dealing with this problem.

Although this book may lack the inspiration and elegance of a classic, it is good enough to be a valuable addition to the literature. As one of the small number of books dealing with periodic solutions it belongs in the library of workers in this field.

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Mathematical Methods in Physics, by J.S.R. Chisholm and Rosa M. Morris. McAinsh Co., Ltd., Toronto, 1966. xviii + 719 pages. $10.80.

According to the preface 'the book is primarily designed as a Mathematics text book which should serve students of Physics, Chemistry and Engineering. It should also be of use to the students specializing in Mathematics'.

The book is written from a classical point of view in a pleasant unhurried style.

It consists of the following twenty chapters.

I. Functions. Limits, continuity, differentiation. II. Integration. Simple methods. III. The convergence of infinite series. IV. The logarithmic and exponential functions. V. Integration, Further results. VI. Further theorems concerning functions of one variable. Expansions

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