

Hinch, E. J.**Perturbation methods.** (English) Zbl 0746.34001**Cambridge Texts in Applied Mathematics.** Cambridge (UK) etc.: Cambridge University Press., xi, 160 p. (1991).

This book presents a formal approach to perturbation methods. No previous knowledge of asymptotic analysis is assumed. Many of the essential concepts are presented in the simpler context of algebraic and ordinary differential equations. While the book used mathematics it is not a pure mathematics one: no attempt has been made to make the arguments fully rigorous. In general the author explains, with the help of physical examples, why the results are correct. The author has managed to present the theory and techniques underlying such methods in a manner which will give the text wide appeal to readers from a broad range of disciplines.

Reviewer: [S.Godts \(Valenciennes\)](#)**MSC:**

- [34-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to ordinary differential equations
- [34E10](#) Perturbations, asymptotics of solutions to ordinary differential equations
- [34E20](#) Singular perturbations, turning point theory, WKB methods for ordinary differential equations

Cited in **177** Documents**Keywords:**

[perturbation](#); [algebraic and ordinary differential equations](#); [asymptotic methods](#); [regular and singular problems](#)