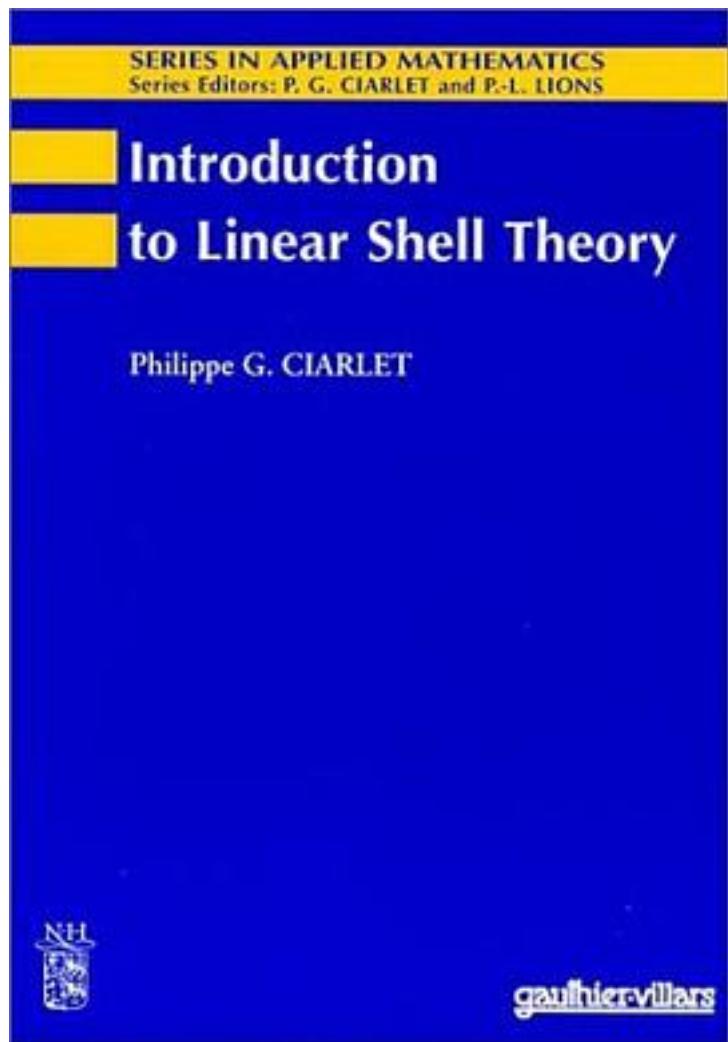


Introduction to Linear Shell Theory



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Paperback. This monograph is a thorough introduction to recent advances in the mathematical theory of linearly elastic shells.

First, it provides a complete analysis of the existence and uniqueness of solutions to the two-dimensional linear membrane, flexural, and Koiter's shell equations. The proofs rely in a crucial way on inequalities of Korn's type on surfaces, which are proved in details.

Second, it shows the method of formal asymptotic expansions, with the thickness as the "small" parameter, provides a very effective strategy for justifying the two fundamental classes of membrane and flexural equations of a linearly elastic shell, thus paving the way for the more advanced justification by means of a convergence analysis also carefully reviewed at the end of this monograph.

The treatment is essentially self-contained. In particular, all the needed preliminaries from differential geometry, including a direct proof of the three-dimensional Korn inequality, are carefully developed at the beginning of the book.

作者介绍:

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