Numerical Methods in Contact Mechanics

Description:
Computational contact mechanics is a broad topic which brings together algorithmic, geometrical, optimization and numerical aspects for a robust, fast and accurate treatment of contact problems. This book covers all the basic ingredients of contact and computational contact mechanics: from efficient contact detection algorithms and classical optimization methods to new developments in contact kinematics and resolution schemes for both sequential and parallel computer architectures. The book is self-contained and intended for people working on the implementation and improvement of contact algorithms in a finite element software.

Using a new tensor algebra, the authors introduce some original notions in contact kinematics and extend the classical formulation of contact elements. Some classical and new resolution methods for contact problems and associated ready-to-implement expressions are provided.

Contents:
1. Introduction to Computational Contact.
2. Geometry in Contact Mechanics.
3. Contact Detection.
4. Formulation of Contact Problems.

About the Authors

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