Título: Matlab Guide To Finite Elements An Interactive Approach

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This successful textbook explores the numerical implementation of Finite Element Analysis using the computer program MATLAB, which is very popular today in engineering and engineering education. The book contains a short tutorial on MATLAB as well as a systematic strategy for the treatment of finite element methods. Useful to both students and researchers in engineering, it provides various examples and exercises from mechanical, civil and aerospace engineering, as well as from materials science. The book especially stresses the interactive use of MATLAB, with each example solved in an interactive manner. An extensive solutions manual is provided as well, which includes detailed solutions to all the problems in the book for classroom use. This second edition includes a new brick (solid) element with eight nodes and a one-dimensional fluid flow element. A review of the applications of finite elements in various fields such as fluid flow, heat transfer, structural dynamics, electro-magnetics, is added as well.

Content Level » Research

Keywords » MATLAB - Toolbox - calculus - finite element method - finite elements - materials science

Related subjects » Classical Continuum Physics - Computational Intelligence and Complexity - Computational Science & Engineering - Mechanics