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Titolo	Elasto-Plasticity of Frame Structure Elements : Modeling and Simulation of Rods and Beams / / by Andreas Öchsner
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Continuum Mechanics of Plasticity -- Axial Loading of Rods -- Bending of Beams -- Review of Linear-Elastic Finite Element Simulations -- Elasto-Plastic Finite Element Simulations -- Alternative Approach: The Finite Difference Method -- Prelude to the General Three-Dimensional Case.
Sommario/riassunto	The finite element method is a powerful tool even for non-linear materials' modeling. But commercial solutions are limited and many novel materials do not follow standard constitutive equations on a macroscopic scale. Thus, is it required that new constitutive equations are implemented into the finite element code. However, it is not sufficient to simply implement only the equations but also an appropriate integration algorithm for the constitutive equation must be provided. This book is restricted to one-dimensional plasticity in order to reduce and facilitate the mathematical formalism and theory and to concentrate on the basic ideas of elasto-plastic finite element procedures. A comprehensive set of completely solved problems is

designed for the thorough understand of the presented theory. After working with this new book and reviewing the provided solved and supplementary problems, it should be much easier to study and understand the advanced theory and the respective text books.