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Titolo	Verifying Calculations - Forty Years On [[electronic resource]] : An Overview of Classical Verification Techniques for FEM Simulations // edited by Ludovic Chamoin, Pedro Díez
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Preface, by Ludovic Chamoin and Pedro Díez -- Explicit Residual Methods, by Yvon Maday -- Residual type error estimators, by Antonio Huerta and Pedro Díez -- Fundamentals of recovery-based error estimation and bounding, by E. Nadal and J.J. Ródenas -- The Constitutive Relation Error Method: a general verification tool, by Pierre Ladevèze and Ludovic Chamoin.
Sommario/riassunto	This work provides an overview of a posteriori error assessment techniques for Finite Element (FE) based numerical models. These tools aim at estimating and controlling the discretization error in scientific computational models, being the basis for the numerical verification of the FE solutions. The text discusses the capabilities and limitations of classical methods to build error estimates which can be used to control the quality of numerical simulations and drive adaptive algorithms, with a focus on Computational Mechanics engineering applications. Fundamentals principles of residual methods, smoothing (recovery)

methods, and constitutive relation error (duality based) methods are thus addressed along the manuscript. Attention is paid to recent advances and forthcoming research challenges on related topics. The book constitutes a useful guide for students, researchers, or engineers wishing to acquire insights into state-of-the-art techniques for numerical verification.
