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Titolo	The Parameterization Method for Invariant Manifolds : From Rigorous Results to Effective Computations / / by Àlex Haro, Marta Canadell, Jordi-Lluís Figueras, Alejandro Luque, Josep Maria Mondelo
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Soggetti	Dynamics Ergodic theory Statistical physics Numerical analysis Differential equations, Partial Dynamical Systems and Ergodic Theory Complex Systems Numerical Analysis Partial Differential Equations Statistical Physics and Dynamical Systems
Lingua di pubblicazione	Inglese
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	An Overview of the Parameterization Method for Invariant Manifolds -- Seminumerical Algorithms for Computing Invariant Manifolds of Vector Fields at Fixed Points -- The Parameterization Method for Quasi-Periodic Systems: From Rigorous Results to Validated Numerics -- The Parameterization Method in KAM Theory -- A Newton-like Method for Computing Normally Hyperbolic Invariant Tori.
Sommario/riassunto	This monograph presents some theoretical and computational aspects of the parameterization method for invariant manifolds, focusing on the following contexts: invariant manifolds associated with fixed points, invariant tori in quasi-periodically forced systems, invariant tori in Hamiltonian systems and normally hyperbolic invariant manifolds. This book provides algorithms of computation and some practical

details of their implementation. The methodology is illustrated with 12 detailed examples, many of them well known in the literature of numerical computation in dynamical systems. A public version of the software used for some of the examples is available online. The book is aimed at mathematicians, scientists and engineers interested in the theory and applications of computational dynamical systems.

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