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Nota di contenuto	Frontmatter -- Preface -- Contents -- Basic notation -- Preliminary results / Lemeshevsky, Sergey / Matus, Piotr / Poliakov, Dmitriy -- Hyperbolic equations / Lemeshevsky, Sergey / Matus, Piotr / Poliakov, Dmitriy -- Parabolic equations / Lemeshevsky, Sergey / Matus, Piotr / Poliakov, Dmitriy -- Use of exact difference schemes to construct NSFD discretizations of differential equations / Mickens, Ronald E. / Washington, Talitha M. -- Exact and truncated difference schemes for boundary-value problem / Gavriluk, Ivan / Kutniv, Myroslav / Makarov, Volodymyr -- Exact difference schemes for stochastic differential equations / Jerez, Silvia / Díaz-Infante, Saúl -- Numerical blow-up time / Kozera, Ryszard / Paradzinska, Agnieszka / Schadinskii, Denis -- List of contributors
Sommario/riassunto	Exact Finite-Difference Schemes is a first overview of the topic also describing the state-of-the-art in this field of numerical analysis. Construction of exact difference schemes for various parabolic and elliptic partial differential equations are discussed, including vibrations and transport problems. After this, applications are discussed, such as the discretisation of ODEs and PDEs and numerical methods for

stochastic differential equations. Contents: Basic notation Preliminary results Hyperbolic equations Parabolic equations Use of exact difference schemes to construct NSFD discretizations of differential equations Exact and truncated difference schemes for boundary-value problem Exact difference schemes for stochastic differential equations Numerical blow-up time Bibliography
