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	Descrizione fisica	1 online resource (199 pages)
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	Soggetti	Functional analysis
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		Difference equations
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		Functional Analysis
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		Partial Differential Equations
		Difference and Functional Equations
	Lingua di pubblicazione	Inglese
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	Nota di contenuto	1. Banach and Hilbert Spaces -- 2. Operator Theory -- 3. Semigroup of Linear Operators -- 4. Almost Periodic Functions and Their Spectral Theory -- 5. Semilinear Difference Equations -- 6. Singular Difference Equations -- 7. Fractional Difference Equations -- 8. First-Order Semilinear Evolution Equations -- 9. Degenerate First-Order Semilinear Evolution Equations -- 10. Fractional Semilinear Evolution Equations -- 11. Second-Order Semilinear Evolution Equations -- 12. Degenerate Second-Order Evolution Equations -- 13. Applications.
	Sommario/riassunto	This book, which is a continuation of Almost Automorphic Type and Almost Periodic Type Functions in Abstract Spaces, presents recent trends and developments upon fractional, first, and second order semilinear difference and differential equations, including degenerate ones. Various stability, uniqueness, and existence results are

established using various tools from nonlinear functional analysis and operator theory (such as semigroup methods). Various applications to partial differential equations and the dynamic of populations are amply discussed. This self-contained volume is primarily intended for advanced undergraduate and graduate students, post-graduates and researchers, but may also be of interest to non-mathematicians such as physicists and theoretically oriented engineers. It can also be used as a graduate text on evolution equations and difference equations and their applications to partial differential equations and practical problems arising in population dynamics. For completeness, detailed preliminary background on Banach and Hilbert spaces, operator theory, semigroups of operators, and almost periodic functions and their spectral theory are included as well.