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Nota di contenuto	1 Auxiliary Materials -- 2 Solvability in the sense of sequences: non-Fredholm operators -- 3 Solvability of some integro-differential equations with mixed diffusion -- 4 Existence of solutions for some non-Fredholm integro-differential equations with mixed diffusion -- 5 Non-Fredholm Schrödinger type operators.
Sommario/riassunto	This book is devoted to a new aspect of linear and nonlinear non-Fredholm operators and its applications. The domain of applications of theory developed here is potentially much wider than that presented in the book. Therefore, a goal of this book is to invite readers to make contributions to this fascinating area of mathematics. First, it is worth noting that linear Fredholm operators, one of the most important classes of linear maps in mathematics, were introduced around 1900 in the study of integral operators. These linear Fredholm operators between Banach spaces share, in some sense, many properties with linear maps between finite dimensional spaces. Since the end of the

previous century there has been renewed interest in linear – nonlinear Fredholm maps from a topological degree point of view and its applications, following a period of “stagnation” in the mid-1960s. Now, linear and nonlinear Fredholm operator theory and the solvability of corresponding equations both from the analytical and topological points of view are quite well understood. Also noteworthy is, that as a by-product of our results, we have obtained an important tool for modelers working in mathematical biology and mathematical medicine, namely, the necessary conditions for preserving positive cones for systems of equations without Fredholm property containing local – nonlocal diffusion as well as terms for transport and nonlinear interactions.
