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Sommario/riassunto	This book surveys the foundations of the theory of slice regular functions over the quaternions, introduced in 2006, and gives an overview of its generalizations and applications. As in the case of other interesting quaternionic function theories, the original motivations were the richness of the theory of holomorphic functions of one complex variable and the fact that quaternions form the only associative real division algebra with a finite dimension n>2. (Slice) regular functions quickly showed particularly appealing features and developed into a full-fledged theory, while finding applications to outstanding problems from other areas of mathematics. For instance, this class of functions includes polynomials and power series. The

nature of the zero sets of regular functions is particularly interesting and strictly linked to an articulate algebraic structure, which allows several types of series expansion and the study of singularities. Integral representation formulas enrich the theory and are fundamental to the construction of a noncommutative functional calculus. Regular functions have a particularly nice differential topology and are useful tools for the construction and classification of quaternionic orthogonal complex structures, where they compensate for the scarcity of conformal maps in dimension four. This second, expanded edition additionally covers a new branch of the theory: the study of regular functions whose domains are not axially symmetric. The volume is intended for graduate students and researchers in complex or hypercomplex analysis and geometry, function theory, and functional analysis in general. From the reviews of the 1st edition: “[The authors] document their own very recent theory of quaternionic regular functions, a development that parallels familiar complex function theory spectacularly well. This user-friendly primary source confirms that quaternionic calculus is not a dead end, and clearly answers a popular question regarding the analogy of complex function theory (complex analysis) with quarternionic variables, making it an excellent basis for a capstone course. Summing Up: Highly recommended. Upper-division undergraduates through professionals.” (D. V. Feldman, Choice, Vol. 51 (1), September, 2013)".