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	Nota di contenuto	Preface -- 1. Short hypertopologies. A short overview -- 2. A Mathematical-physical approach on regularity in hit-and-miss hypertologies for fuzzy set multifunctions -- 3. Non-atomic set multifunctions -- 4. Non-atomicity and the Darboux property for fuzzy and non-fuzzy Borel/Baire multivalued set functions -- 5. Atoms and pseudo-atoms for set multifunctions -- 6. Gould integrability on atoms for set multifunctions -- 7. Continuity properties and the Alexandroff theorem in Vietoris topology -- 8. Approximation theorems for fuzzy set multifunctions in Vietoris topology. Physical implications of regularity- 9. Atomicity via regularity for non-additive set malfunctions -- 10. Extended atomicity through non-differentiability and its physical implications -- 11. On a multifractal theory of motion in a non-differentiable space. Toward a possible multifractal theory of measure -- List of symbols -- Index.
	Sommario/riassunto	This book presents an exhaustive study of atomicity from a mathematics perspective in the framework of multi-valued non-

additive measure theory. Applications to quantum physics and, more generally, to the fractal theory of the motion, are highlighted. The study details the atomicity problem through key concepts, such as the atom/pseudoatom, atomic/nonatomic measures, and different types of non-additive set-valued multifunctions. Additionally, applications of these concepts are brought to light in the study of the dynamics of complex systems. The first chapter prepares the basics for the next chapters. In the last chapter, applications of atomicity in quantum physics are developed and new concepts, such as the fractal atom are introduced. The mathematical perspective is presented first and the discussion moves on to connect measure theory and quantum physics through quantum measure theory. New avenues of research, such as fractal/multifractal measure theory with potential applications in life sciences, are opened.