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	Titolo	Multi-Valued Variational Inequalities and Inclusions / / by Siegfried Carl, Vy Khoi Le
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	Disciplina	515.64
	Soggetti	Mathematical analysis
		Differential equations
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		Mathematical optimization
		Calculus of variations
		Mathematics
		Analysis
		Differential Equations
		Operator Theory
		Calculus of Variations and Optimization
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	Lingua di pubblicazione	Inglese
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	Sommario/riassunto	This book focuses on a large class of multi-valued variational differential inequalities and inclusions of stationary and evolutionary types with constraints reflected by subdifferentials of convex functionals. Its main goal is to provide a systematic, unified, and relatively self-contained exposition of existence, comparison and enclosure principles, together with other qualitative properties of multi-valued variational inequalities and inclusions. The problems under consideration are studied in different function spaces such as Sobolev spaces, Orlicz-Sobolev spaces, Sobolev spaces with variable exponents, and Beppo-Levi spaces. A general and comprehensive sub-

supersolution method (lattice method) is developed for both stationary and evolutionary multi-valued variational inequalities, which preserves the characteristic features of the commonly known sub-supersolution method for single-valued, quasilinear elliptic and parabolic problems. This method provides a powerful tool for studying existence and enclosure properties of solutions when the coercivity of the problems under consideration fails. It can also be used to investigate qualitative properties such as the multiplicity and location of solutions or the existence of extremal solutions. This is the first in-depth treatise on the sub-supersolution (lattice) method for multi-valued variational inequalities without any variational structures, together with related topics. The choice of the included materials and their organization in the book also makes it useful and accessible to a large audience consisting of graduate students and researchers in various areas of Mathematical Analysis and Theoretical Physics.