

Contents

Introduction	vii
Chapter 0	
Preliminaries	
0.1 Functions of bounded variation	1
0.2 Compactness results for functions of bounded variation	10
0.3 Convergence in the sense of filled-in graphs	15
0.4 Geometrical inequalities	20
Chapter 1	
Regularization and Graph Approximation of a Discontinuous Evolution	
1.1 Introduction	27
1.2 Preliminary estimates	30
1.3 Limit functions	35
1.4 The solution	39
1.5 Graph convergence	42
Chapter 2	
Sweeping Processes by Convex Sets with Nonempty Interior	
2.1 Introduction	45
2.2 Continuous convex set in arbitrary dimension: preliminary results	46
2.3 Continuous convex set in arbitrary dimension: algorithm and existence	50
2.4 Lower semicontinuous convex set in finite dimension	59
Chapter 3	
Inelastic Shocks with or without Friction: Existence Results	
3.1 Introduction	72
3.2 Frictionless inelastic shocks	82
3.3 Inelastic shocks with friction	95
Chapter 4	
Externally Induced Dissipative Collisions	
4.1 Formulation of the problem	112
4.2 Existence of a solution	117
4.3 Complements	126

Chapter 5	
Further Applications and Related Topics	
5.1 A class of second-order differential inclusions	132
5.2 Lipschitz approximations of sweeping processes	141
5.3 An application of differential inclusions to quasi-statics	155
5.4 Additional references	162
Bibliography	167
Index	177
Index of Notation	179