

Contents

Preface	vii
Contributing Authors	viii
Foreword	ix
<i>Roger J-B. Wets</i>	
1	
Interdicting Smuggled Nuclear Material	1
<i>Feng Pan, William S. Charlton and David P. Morton</i>	
1 A Stochastic Network Interdiction Model	5
2 Complexity	10
3 Application to Smuggling Out of a Single Country	12
4 Summary	16
5 Acknowledgements	17
2	
Enumerating Near-Min s-t Cuts	21
<i>Ahmet Balcioglu and R. Kevin Wood</i>	
1 Preliminaries	25
2 Theoretical Results	26
3 Computational Results	37
4 Conclusions and Recommendations	45
3	
A Decomposition-Based Approximation for Network Inhibition	51
<i>Carl Burch, Robert Carr, Sven Krumke, Madhav Marathe, Cynthia Phillips and Eric Sundberg</i>	
1 Introduction	52
2 A Mixed-Integer Program for Network Inhibition	56
3 The Pseudo-approximation Algorithm	57
4 Decomposition	59
5 Geometry	64
6 Extensions	66

4

Interdicting Stochastic Networks 69

Raymond Hemmecke, Rüdiger Schultz and David L. Woodruff

1	Introduction	70
2	Example	73
3	A Special Case: Disconnection as the Threshold	76
4	Benchmarks	78
5	Conclusions	81

5

Stochastic Batch-Sizing 85

Guglielmo Lulli and Suvrajeet Sen

1	Stochastic Batch-Sizing Formulations	88
2	Algorithmic approaches for Stochastic Batch-Sizing	92
3	Computational Results	95
4	Solutions from Alternative Models	98
5	Conclusions	101

6

Disjunctive Decomposition with Set Convexification 105

Suvrajeet Sen, Julia L. Hingle and Lewis Ntaimo

1	Background	106
2	An Illustration of the D^2 Algorithm	115
3	Conclusions	123