

Content:

Chapter 1: Truth and science	1
1.0 The whole truth	
1.1 Mathematical Truth	
1.2 Physical truth	
1.3 Religious Truth	
1.4 Definition of Science	
Chapter 2: About the process	16
2.0 Transport of particles	
2.1 Transport of systems	
2.1.1 The free flight kernel	
2.1.2 The event kernel	
2.2 The Prediction line	
2.2.1 The case of sensitivity	
2.2.2 A non-monotonic system	
2.2.3 data analysis and inspection	
2.2.4 Conveyer rollers and independence of components	
Chapter 3: A few words more about the transport Equation	60
3.0 Transport and free will	
3.1 Availability & Reliability and Estimators	
3.1.1 Throughput and the basic Monte Carlo history	
3.1.2 Number of failures & cost items	
3.2 The explicit Equation	
3.2.1 The transport equation in steady state	
3.2.2 Reduction to the Markov equation	
3.2.3 A power production system, Markov and MC transport solutions	
3.2.4 The production Histogram and warranty	
3.2.5 A Monte Carlo transport Solution	
3.3 Partial repair and aging in the explicit transport Equation:	
3.3.1 Analytic and Markov approach to the protected pump model	
3.3.2 The Monte Carlo transport solution	
3.4 A buffer tank in chemical production	
3.4.1 A simplistic analytic model	
3.4.2 States and the transport equations of the basic flow model	
3.4.3 Modeling the flow process	
3.4.3.1 The Base-line flow model	
3.4.3.2 Improved flow management	
4. The analysis and optimization of spare parts and other resources	108
4.1 General discussion	

- 4.1.1 Ancestors' approach
- 4.1.2 Modified ancestors-approach- Sufficiency
- 4.1.3 Partial refurbishing of components
- 4.1.4 Cannibalization
- 4.1.5 Passive/active relations
- 4.1.6 Verification and validation
- 4.1.7 Aging and minimal repair

4.2 Some analytic methods

- 4.2.1 The classic "back order" approach
- 4.2.2. The waiting time approach

4.3 Introduction to Hybrid MC optimization with Analytic interpolation:

- 4.3.1 Multiple fields, single depot
- 4.3.2 Local repair and condemnation
- 4.3.3 Generalized Model
- 4.3.4 Lateral demands
- 4.3.5 Repair resources

5. Bedtime stories for System Engineers 146

- 5.1 Zero failures
- 5.2 Urgency is in the eyes of the beholder
- 5.3. Keeping transportation cost down
- 5.4 When a calculation is too good
- 5.5 Radioactive badge
- 5.6 The guy on the forklift and data interpretation
- 5.7 The bliss of dimensionality
- 5.8 Critical redundancy
- 5.9 The age of a train
- 5.10 A matter of law

References 165

Bibliography 166