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Altri autori (Persone)	RolskiTomasz
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Nota di contenuto	Stochastic Processes for Insurance and Finance; Contents; Preface; List of Principal Notation; 1 Concepts from Insurance and Finance; 1.1 Introduction; 1.2 The Claim Number Process; 1.2.1 Renewal Processes; 1.2.2 Mixed Poisson Processes; 1.2.3 Some Other Models; 1.3 The Claim Size Process; 1.3.1 Dangerous Risks; 1.3.2 The Aggregate Claim Amount; 1.3.3 Comparison of Risks; 1.4 Solvability of the Portfolio; 1.4.1 Premiums; 1.4.2 The Risk Reserve; 1.4.3 Economic Environment; 1.5 Reinsurance; 1.5.1 Need for Reinsurance; 1.5.2 Types of Reinsurance; 1.6 Ruin Problems; 1.7 Related Financial Topics 1.7.1 Investment of Surplus1.7.2 Diffusion Processes; 1.7.3 Equity Linked Life Insurance; 2 Probability Distributions; 2.1 Random Variables and Their Characteristics; 2.1.1 Distributions of Random Variables; 2.1.2 Basic Characteristics; 2.1.3 Independence and Conditioning; 2.1.4 Convolution; 2.1.5 Transforms; 2.2 Parametrized Families of Distributions; 2.2.1 Discrete Distributions; 2.2.2 Absolutely Continuous

Distributions; 2.2.3 Parametrized Distributions with Heavy Tail; 2.2.4 Operations on Distributions; 2.2.5 Some Special Functions; 2.3 Associated Distributions  
2.4 Distributions with Monotone Hazard Rates  
2.4.1 Discrete Distributions; 2.4.2 Absolutely Continuous Distributions; 2.5 Heavy-Tailed Distributions; 2.5.1 Definition and Basic Properties; 2.5.2 Subexponential Distributions; 2.5.3 Criteria for Subexponentiality and the Class  $S'$ ; 2.5.4 Pareto Mixtures of Exponentials; 2.6 Detection of Heavy-Tailed Distributions; 2.6.1 Large claims; 2.6.2 Quantile Plots; 2.6.3 Mean Residual Hazard Function; 2.6.4 Extreme Value Statistics; 3 Premiums and Ordering of Risks; 3.1 Premium Calculation Principles; 3.1.1 Desired Properties of "Good" Premiums  
3.1.2 Basic Premium Principles  
3.1.3 Quantile Function: Two More Premium Principles; 3.2 Ordering of Distributions; 3.2.1 Concepts of Utility Theory; 3.2.2 Stochastic Order; 3.2.3 Stop-Loss order; 3.2.4 The Zero Utility Principle; 3.3 Some Aspects of Reinsurance; 4 Distributions of Aggregate Claim Amount; 4.1 Individual and Collective Model; 4.2 Compound Distributions; 4.2.1 Definition and Elementary Properties; 4.2.2 Three Special Cases; 4.2.3 Some Actuarial Applications; 4.2.4 Ordering of Compounds; 4.2.5 The Larger Claims in the Portfolio; 4.3 Claim Number Distributions  
4.3.1 Classical Examples  
Panjer's Recurrence Relation; 4.3.2 Discrete Compound Poisson Distributions; 4.3.3 Mixed Poisson Distributions; 4.4 Recursive Computation Methods; 4.4.1 The Individual Model: De Prill's Algorithm; 4.4.2 The Collective Model: Panjer's Algorithm; 4.4.3 A Continuous Version of Panjer's Algorithm; 4.5 Lundberg Bounds; 4.5.1 Geometric Compounds; 4.5.2 More General Compound Distributions; 4.5.3 Estimation of the Adjustment Coefficient; 4.6 Approximation by Compound Distributions; 4.6.1 The Total Variation Distance; 4.6.2 The Compound Poisson Approximation  
4.6.3 Homogeneous Portfolio

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## Sommario/riassunto

Stochastic Processes for Insurance and Finance offers a thorough yet accessible reference for researchers and practitioners of insurance mathematics. Building on recent and rapid developments in applied probability, the authors describe in general terms models based on Markov processes, martingales and various types of point processes. Discussing frequently asked insurance questions, the authors present a coherent overview of the subject and specifically address: The principal concepts from insurance and finance  
Practical examples with real life data  
Numerical and algorithm

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