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1.6.7 Variance and covariance1.7 Transforms; 1.7.1 Stop-loss transform; 1.7.2 Hazard rate; 1.7.3 Mean-excess function; 1.7.4 Stationary renewal distribution; 1.7.5 Laplace transform; 1.7.6 Moment generating function; 1.8 Conditional Distributions; 1.8.1 Conditional densities; 1.8.2 Conditional independence; 1.8.3 Conditional variance and covariance; 1.8.4 The multivariate normal distribution; 1.8.5 The family of the elliptical distributions; 1.9 Comonotonicity; 1.9.1 Definition; 1.9.2 Comonotonicity and Frechet upper bound; 1.10 Mutual Exclusivity; 1.10.1 Definition
1.10.2 Frechet lower bound1.10.3 Existence of Frechet lower bounds in Frechet spaces; 1.10.4 Frechet lower bounds and maxima; 1.10.5 Mutual exclusivity and Frechet lower bound; 1.11 Exercises; 2 Measuring Risk; 2.1 Introduction; 2.2 Risk Measures; 2.2.1 Definition; 2.2.2 Premium calculation principles; 2.2.3 Desirable properties; 2.2.4 Coherent risk measures; 2.2.5 Coherent and scenario-based risk measures; 2.2.6 Economic capital; 2.2.7 Expected risk-adjusted capital; 2.3 Value-at-Risk; 2.3.1 Definition; 2.3.2 Properties; 2.3.3 VaR-based economic capital
2.3.4 VaR and the capital asset pricing model2.4 Tail Value-at-Risk; 2.4.1 Definition; 2.4.2 Some related risk measures; 2.4.3 Properties; 2.4.4 TVaR-based economic capital; 2.5 Risk Measures Based on Expected Utility Theory; 2.5.1 Brief introduction to expected utility theory; 2.5.2 Zero-Utility Premiums; 2.5.3 Esscher risk measure; 2.6 Risk Measures Based on Distorted Expectation Theory; 2.6.1 Brief introduction to distorted expectation theory; 2.6.2 Wang risk measures; 2.6.3 Some particular cases of Wang risk measures; 2.7 Exercises; 2.8 Appendix: Convexity and Concavity; 2.8.1 Definition
2.8.2 Equivalent conditions

Sommario/riassunto

The increasing complexity of insurance and reinsurance products has seen a growing interest amongst actuaries in the modelling of dependent risks. For efficient risk management, actuaries need to be able to answer fundamental questions such as: Is the correlation structure dangerous? And, if yes, to what extent? Therefore tools to quantify, compare, and model the strength of dependence between different risks are vital. Combining coverage of stochastic order and risk measure theories with the basics of risk management and stochastic dependence, this book provides an essential guide to managing
