Malliavin Calculus for Leacute;vy Processes with Applications to Finance (Universitext)

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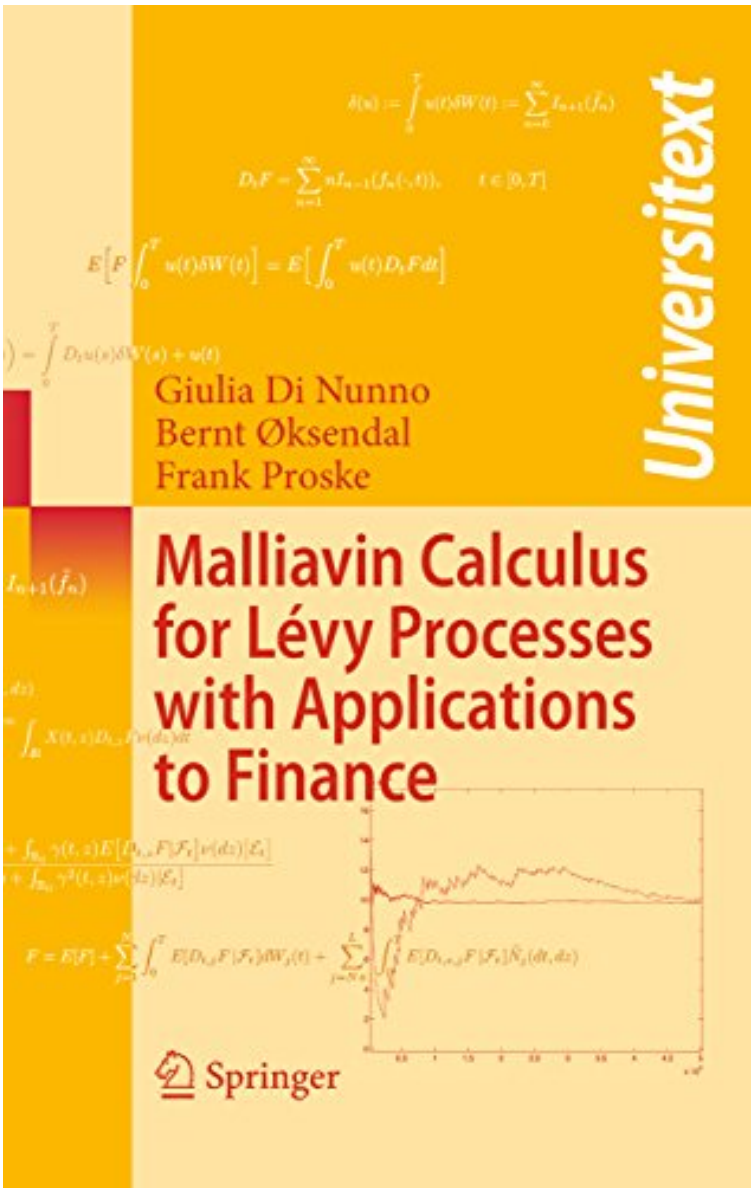

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Giulia Di Nunno, Bernt Oslash;ksendal, Frank Proske : Malliavin Calculus for Leacute;vy Processes with Applications to Finance (Universitext) before purchasing it in order to gage whether or not it would be worth my time, and all praised Malliavin Calculus for Leacute;vy Processes with Applications to Finance (Universitext):

6 of 19 people found the following review helpful. Theoretical frameworkBy BachelierMalliavin calculus was started for fluid dynamics and densities of solutions and stochastic differential equations that described them (okay, here is a

hint...imagine water, that is a fluid with a certain density, and it moves through *rocks* which are also fluid (just a very very slow moving fluid) and also have a different density. Malvian calculus describes all that).Malliavin Calculus for Leacute;vy Processes with Applications to Finance takes the insights worked out in fluid mechanics engineering and applies them to finance.Emphasis is on stochastic control and finance and regime switching. Topics include hedging in complete and incomplete markets, optimization, optimization with asymmetric information, and also price sensitivity analysis with asymmetric information and steep of flat utility curves. All this using Malliavin calculus, Brownian motion and general Bachelier (Levy-Einstein) noise environments.Forward integration is extended to general Bachelier processes and insider trading (again, asymmetric information) analysis.The book is for math grad students and researchers in this specialized field. About half of these essays are marginally useful for practitioners, but most is set in a theoretical framework world.Throughout the work Bachelier processes are mis-named "Levy processes." An insult to the late Louis Bachelier and an undeserved continuation of recognition for Levy in the field which he does not deserve (keep in mind Levy did make many contributions to the field, just that Brownian motion was first applied by Bachelier and only latter expanded on by Levy, ironically at physics problems and not on finance ones, whereas Bachelier had the insight that finance problems was the most fruitful area of inquiry).

This book is an introduction to Malliavin calculus as a generalization of the classical non-anticipating Ito calculus to an anticipating setting. It presents the development of the theory and its use in new fields of application.

From the reviews: ldquo;The book under review gives a quite complete description of the Malliavin and white noise approaches to stochastic analysis on both the Wiener and Poisson spaces with applications to mathematical finance. hellip; In addition each chapter is accompanied with exercises and their solutions. hellip; The technical requirements of the book are kept at a reasonable level and its organisation into short chapters not only facilitates the reading but also provides several alternative study plans making it a valuable learning and reference tool.rdquo; (Nicolas Privault, Mathematical s, Issue 2010 f)From the Back CoverWhile the original works on Malliavin calculus aimed to study the smoothness of densities of solutions to stochastic differential equations, this book has another goal. It portrays the most important and innovative applications in stochastic control and finance, such as hedging in complete and incomplete markets, optimisation in the presence of asymmetric information and also pricing and sensitivity analysis. In a self-contained fashion, both the Malliavin calculus with respect to Brownian motion and general Leacute;vy type of noise are treated. Besides, forward integration is included and indeed extended to general Leacute;vy processes. The forward integration is a recent development within anticipative stochastic calculus that, together with the Malliavin calculus, provides new methods for the study of insider trading problems. To allow more flexibility in the treatment of the mathematical tools, the generalization of Malliavin calculus to the white noise framework is also discussed. This book is a valuable resource for graduate students, lecturers in stochastic analysis and applied researchers.About the AuthorGiulia Di Nunno, Bernt Oslash;ksendal and Frank Proske are professors at the Department of Mathematics, University of Oslo, Norway. The three scholars are active in the fields of stochastic analysis, mathematical and quantitative finance.