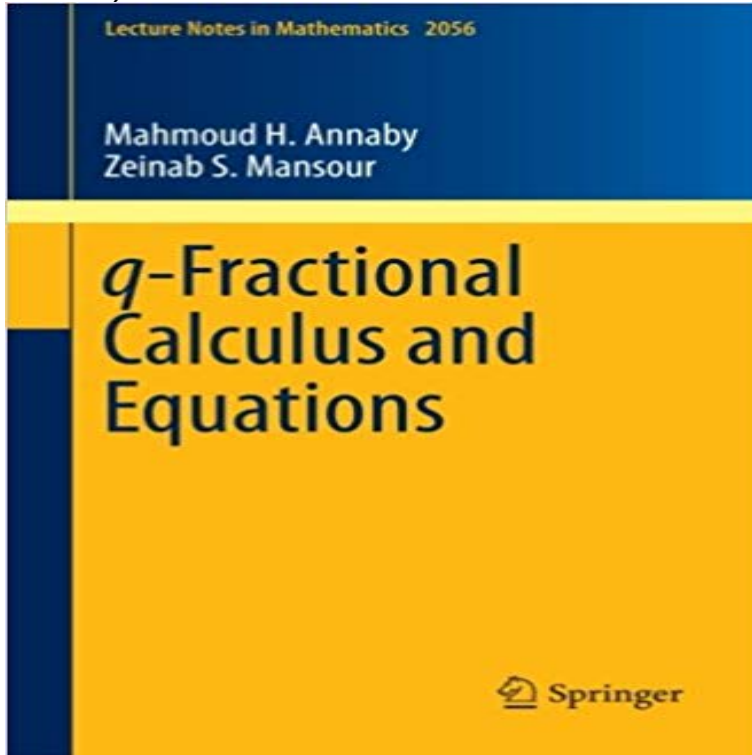


q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056)



This nine-chapter monograph introduces a rigorous investigation of q -difference operators in standard and fractional settings. It starts with elementary calculus of q -differences and integration of Jackson's type before turning to q -difference equations. The existence and uniqueness theorems are derived using successive approximations, leading to systems of equations with retarded arguments. Regular q -Sturm-Liouville theory is also introduced; Green's function is constructed and the eigenfunction expansion theorem is given. The monograph also discusses some integral equations of Volterra and Abel type, as introductory material for the study of fractional q -calculus. Hence fractional q -calculus of the types Riemann-Liouville; Grunwald-Letnikov; Caputo; Erdelyi-Kober and Weyl are defined analytically. Fractional q -Leibniz rules with applications in q -series are also obtained with rigorous proofs of the formal results of Al-Salam-Verma, which remained unproved for decades. In working towards the investigation of q -fractional difference equations; families of q -Mittag-Leffler functions are defined and their properties are investigated, especially the q -Mellin-Barnes integral and Hankel contour integral representation of the q -Mittag-Leffler functions under consideration, the distribution, asymptotic and reality of their zeros, establishing q -counterparts of Wiman's results. Fractional q -difference equations are studied; existence and uniqueness theorems are given and classes of Cauchy-type problems are completely solved in terms of families of q -Mittag-Leffler functions. Among many q -analogs of classical results and concepts, q -Laplace, q -Mellin and q^2 -Fourier transforms are studied and their applications are investigated.

[\[PDF\] Social Neuroscience: Biological Approaches to Social Psychology \(Frontiers of Social Psychology\)](#)

[\[PDF\] A Text Book of Chemistry \(Classic Reprint\)](#)

[\[PDF\] Chemistry: Principles and Reactions](#)

[\[PDF\] Methoden Der Organischen Chemie \(Methods in Organic Chemistry\). Volume E 10b / Part 1. Organo-Fluorine Compounds](#)

[\[PDF\] The Penguin Dictionary of British Natural History](#)

[\[PDF\] Food Journal for Teens](#)

[\[PDF\] Spirulina Probable Insulin Source](#)

q-SturmLiouville Problems - Springer About q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056). This nine-chapter monograph introduces a rigorous investigation of **Q Fractional Calculus Equations by Annaby Mahmoud Mansour q-Fractional Calculus and Equations (Lecture Notes in Mathematics** Find great deals for Lecture Notes in Mathematics: Q-Fractional Calculus and Equations 2056 by Mahmoud H. Annaby and Zeinab S. I. Mansour (2012, **q-Integral Transforms for Solving Fractional q-Difference Equations** Aug 26, 2012 : q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056): 364230897X New Condition. **q-MittagLeffler Functions - Springer** Aug 26, 2012 q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) by Annaby, Mahmoud H. Mansour, Zeinab S. and a great **q-Fractional Calculus and Equations (Lecture Notes in Mathematics** Chapter (249 KB). Chapter. q -Fractional Calculus and Equations. Volume 2056 of the series Lecture Notes in Mathematics pp 271-293. Date: **q-Fractional Calculus and Equations (Lecture Notes in Mathematics** Chapter (328 KB). Chapter. q -Fractional Calculus and Equations. Volume 2056 of the series Lecture Notes in Mathematics pp 73-105. Date: **Advances in Nonlinear Analysis via the Concept of Measure of - Google Books Result** q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) in Books, Textbooks, Education eBay. **Preliminaries - Springer** Pure Applied Math. 12 (1959) H. Amann, Linear and Quasilinear Parabolic Problems, Vol. I, Birkhauser, Basel, 1995. 9. M. H. Annaby, Z. S. Mansour, q-Fractional Calculus and Equations, Lecture Notes Math. 2056, Springer-Verlag, 2012. **q -Fractional Calculus and Equations - Springer** Chapter (355 KB). Chapter. q -Fractional Calculus and Equations. Volume 2056 of the series Lecture Notes in Mathematics pp 41-71. Date: **Quantum Calculus: New Concepts, Impulsive IVPs and BVPs, Inequalities - Google Books Result** Aug 26, 2012 : q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) (9783642308970) by Mahmoud H. Annaby **Lecture Notes in Mathematics: Q-Fractional Calculus and Equations** Chapter (400 KB). Chapter. q -Fractional Calculus and Equations. Volume 2056 of the series Lecture Notes in Mathematics pp 1-39. Date: **q-Fractional Calculus and Equations Mahmoud H. Annaby Springer** Rent, buy, or sell q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) - ISBN 9783642308970 - Orders over \$49 ship for free! **q-Fractional Calculus and Equations (Lecture Notes in Mathematics** Chapter (235 KB). Chapter. q -Fractional Calculus and Equations. Volume 2056 of the series Lecture Notes in Mathematics pp 201-222. Date: **q-Fractional Calculus and Equations (Lecture Notes in - Bookbyte Proc. Edinb. Math. Soc.**15(2), 135140 (1966/1967) Annaby, M.H., Mansour, Z.S.: q-fractional calculus and equations. Lecture Notes in Mathematics, vol. 2056. **Lecture Notes in Mathematics: Q-Fractional Calculus and Equations** Nov 26, 2015 Volume 2015 (2015), Article ID 759378, 10 pages R. A. Ferreira, Positive solutions of a nonlinear q-fractional difference equation with integral and derivatives in q-calculus, Applicable Analysis and Discrete Mathematics, vol. 2056 of Lecture Notes in Mathematics, Springer, Berlin, Germany, 2012. **q-Fractional Calculus and Equations (Lecture Notes in Mathematics** q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) by Mahmoud H. Annaby (2012-08-26) q-Fractional Calculus and Equations **q-Fractional Calculus and Equations (Lecture Notes in Mathematics** Chapter (241 KB). Chapter. q -Fractional Calculus and Equations. Volume 2056 of the series Lecture Notes in Mathematics pp 147-173. Date: **q-Fractional Calculus and Equations, (Annaby, Mansour) - math NIST** Lecture Notes in Mathematics: Q-Fractional Calculus and Equations 2056 by and Equations (Lecture Notes in Mathematics, Vol. 2056). \$44.00 Buy It Now. **q-Fractional Calculus and Equations (Lecture Notes in Mathematics** M.H. Annaby and Z.S. Mansour, q-Fractional Calculus and Equations, Lecture Notes in Mathematics, Vol. 2056, Springer, Berlin, 2012. [14] [15] [16] [17] [18] [19] **q-Difference Equations - Springer** q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) - Ebook Detail. q-Fractional Calculus and Equations (Lecture Notes in **(Lecture Notes in Mathematics, Vol. 2056) by Mahmoud H. Annaby** Lecture Notes in Mathematics q-Fractional Calculus and Equations In working towards the investigation of q-fractional difference equations families of **q-Fractional Calculus and Equations (Lecture - Q-Fractional Calculus and Equations 2056 by Mahmoud H.**

Annaby and and Equations (Lecture Notes in Mathematics, Vol. 2056). Be the first to write a review [**Lecture Notes in Mathematics**] **q -Fractional Calculus and Equations** Home Contact Us Download Book (PDF, 2971 KB). Book. Lecture Notes in Mathematics. Volume 2056 2012. q -Fractional Calculus and Equations **Abstract Volterra Integro-Differential Equations - Google Books Result** q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056). Sep 20, 2016 Google Science 5421. 41bzmtki0vl. 0 reviews. Written by Sep 15, 2012 q-Fractional Calculus and Equations. Series: Lecture Notes in Mathematics, Vol. 2056. Annaby, Mahmoud H., Mansour, Zeinab S. 2012, xix + **Other q-Fractional Calculi - Springer** Buy q-Fractional Calculus and Equations (Lecture Notes in Mathematics, Vol. 2056) on ? FREE SHIPPING on qualified orders.