ÇANKAYA UNIVERSITY
FACULTY OF ARTS AND SCIENCES
DEPARTMENT OF MATHEMATICS

SEMINAR

TITLE: Monotonicity results for fractional difference operators with singular and nonsigular kernels

SPEAKER: Prof. Dr. Thabet Abdeljawad, Prince Sultan University, Saudi Arabia

DATE : 11 November, 2016

TIME : 12:00

PLACE : Çankaya University (Central Campus), R-213

Abstract

In Newtonian calculus it is well known that the function f(x) is increasing on an interval if and only if its derivative there is positive. In this talk we discuss the fractional difference analogue of this monotonicity result [1-3]. Indeed, we shall analyze the monotonicity of the fractional difference operator with discrete exponential kernel and discrete Mittag-Leffler kernel and compare the results with classical fractional case when the kernel is singular. As an application to our monotonicity results we formulate some discrete fractional Mean-Value Theorem versions.

[1] T. Abdeljawad, D. Baleanu, *Discrete fractional differences with nonsingular discrete Mittag-Leffler kernels, Advances in Difference Equations (2016) 2016:232, DOI 10.1186/s13662-016-0949-5.*

[2] T. Abdeljawad, B. Abdalla, *Monotonicity Results for Delta and Nabla Caputo and Riemann Fractional Differences Via Dual Identities, Filomat Journal of Math. (2016).*

[3]T. Abdeljawad, D. Baleanu, *Monotonicity analysis of a nabla discrete fractional operator with nonsingular discrete Mittag-Leffler kernel, submitted.*

All interested are cordially invited.

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