

1135-39-1270

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In this talk we will describe the effect of nonlocal elements in the discrete fractional calculus. More specifically, we will demonstrate the connections between the sign of a discrete fractional operator acting on a map  $f$  and the associated monotonicity or convexity of  $f$ . Some representative results in the area will be discussed, and, especially, the sharpness of the results will be mentioned. Finally, we will compare and contrast these results with those known for non-fractional difference operators, and it will be shown that in the fractional case there is considerably greater richness and underlying mathematical complexity. (Received September 20, 2017)