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FRACTIONAL CALCULUS AND CESÀRO OPERATORS IN THE CONTINUOUS AND DISCRETE CASES.

In this seminar, we present a complete spectral research of generalized Cesàro operators on Sobolev-Lebesgue function and sequence spaces. The main idea is to subordinate such operators to suitable \mathcal{C}_0 -semigroups on these spaces. We introduce that family of sequence spaces using the fractional calculus and finite differences. We also prove some structural properties similar to classical Lebesgue function and sequence spaces. In order to show the main results about fractional finite differences, we state equalities involving sums of quotients of Euler's Gamma functions. Finally, we display some graphical representations of the spectra of generalized Cesàro operators.