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DIRECT ESTIMATES IN SIMULTANEOUS APPROXIMATION FOR DURRMEYER TYPE OPERATORS

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Abstract. In the present paper, we study a Durrmeyer type integral modification of the well-known Baskakov operators with the weight function of Beta basis function. Some approximation properties of these operators were recently studied by Finta [2]. Here we study simultaneous approximation properties for these operators. We estimate local direct result in terms of modulus of continuity. The operators considered in this paper reproduce not only the constant functions but also the linear ones, due to this property we can improve the order of approximation for these operators by applying the iterative combinations, which were first studied by Micchelli [7]. We establish an asymptotic formula and error estimation in terms of higher order modulus of continuity in simultaneous approximation for the Micchelli combinations of these operators.

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