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ON A CLASS OF DIFFERENTIAL–DIFFERENCE OPERATORS IN SPACES OF ANALYTIC FUNCTIONS

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Abstract. We define the differential-difference operator which generalizes the Dunkl operator and the Bessel-Struve operator in the space of analytic functions in an arbitrary starlike p-symmetric domain of the complex plane with respect to the origin, where p is some positive integer. We investigate conditions of the equivalence of this operator to the power of the usual differentiation. We describe the commutant of this operator. We establish the hypercyclicity and the chaoticity of this operator. We investigate properties of diagonal operators induced by the Taylor coefficients of the generalized hypergeometric function.

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Paper OaM-11-71

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