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GENERALIZATION OF CERTAIN SUBCLASS OF CONVEX FUNCTIONS AND A CORRESPONDING SUBCLASS OF STARLIKE FUNCTIONS WITH NEGATIVE COEFFICIENTS

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Abstract. Making use of Salagean operators, D^n and D^{n+m} ($n \in \mathbb{N}_0 = \mathbb{N} \cup \{0\}$, $m \in \mathbb{N} = \{1, 2, ...\}$), we define the class $T_j(n, m, \alpha, \beta)$ ($n \in \mathbb{N}_0$, $j, m \in \mathbb{N}, -1 \leq \alpha < 1, \beta \geq 0$). In this paper, we obtain coefficient estimates, distortion theorem , closure theorems and radii of close - to - convexity , starlikeness and convexity for functions belonging to the class $T_j(n, m, \alpha, \beta)$. We consider integral operators associated with functions belonging to the class $T_j(n, m, \alpha, \beta)$. We also obtain several results for the modified Hadamard products of functions belonging to the class $T_j(n, m, \alpha, \beta)$. Finally, distortion theorems for the fractional calculus of functions in the class $T_j(n, m, \alpha, \beta)$ are obtained.

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