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ON NEIGHBORHOODS OF CERTAIN CLASSES OF ANALYTIC FUNCTIONS WITH NEGATIVE COEFFICIENTS

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Abstract. Let $\mathcal{A}(n)$ denote the class of functions of the form

$$f(z) = z - \sum_{k=n+1}^{\infty} a_k z^k$$
, $(a_k \ge 0, n \in \mathbb{N} = \{1, 2, \dots\}),$

which are analytic in the open unit disk $\mathcal{U} = \{z : |z| < 1\}$. In this note, we define certain subclasses $\mathcal{S}_n^*(A, B)$, $\mathcal{C}_n(A, B)$, $\mathcal{R}_n(A, B)$, $\mathcal{Q}_n(A, B)$, $\mathcal{S}_n(A, B; C, D)$ and $\mathcal{C}_n(A, B; C, D)$ of $\mathcal{A}(n)$ and some properties of neighborhoods are studied for these classes.

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REFERENCES

- [1] CHATTERJEA, S.K., On starlike functions, J. Pure Math., 1 (1981), 23–26.
- [2] DUREN, P.L., Univalent functions, Springer-Verlag, 1983.
- [3] LAKSHMA REDDY, G. and PADMANABHAN, K.S., *p-valent regular functions with negative coefficients*, Commentarii Mathematici Universitatis Sancti Pauli, Volume **32**, No. 1, 1983.
- [4] OSMAN ALTINTAS and SHIGEYOSHI OWA, Neighborhoods of certain analytic functions with negative coefficients, Internat. J. Math. and Math. Sci., Volume 19, No. 4 (1996), 797–800.
- [5] SARABGI, S.M. and URALEGADDI, B.A., The radius of convexity and starlikeness for certain classes of analytic functions with negative coefficients, Atti. Accad. Nazion. Lincer., 65 (1978), 38–42.
- [6] SRIVASTAVA, H.M., OWA, S. and CHATTERJEA, S.K., A note on certain classes of starlike functions, Rend. Semin. Mat. Univ. Pandova, 77 (1987), 115–124.
- [7] RUSCHEWEYH, S., Neighbohoods of univalent functions, Proc. Amer. Math. Soc., 81 (1981), 521–527.

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