

ON CERTAIN SUBCLASS OF p -VALENT FUNCTIONS WITH POSITIVE COEFFICIENTS

(Berkenaan Subkelas Fungsi p -Valen Tertentu Berpekali Positif)

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ABSTRACT

In this article, a certain differential operator $S_{\alpha,\beta,\lambda,\delta,p}^k f(z)$ and a subclass $S_{n,p}(\alpha,\beta,\delta,\lambda,p)$ for analytic functions with positive coefficients of the form $f(z) = z^p + \sum_{n=p+1}^{\infty} a_n z^n$ are introduced. Some properties such as the coefficients inequalities, distortion theorem, radii of starlikeness and convexity, closure theorems and extreme points are given. A class preserving an integral operator is also stated.

Keywords: analytic function; starlike functions; convex functions; integral operator

ABSTRAK

Dalam makalah ini, pengoperasi pembeza tertentu $S_{\alpha,\beta,\lambda,\delta,p}^k f(z)$ dan subkelas $S_{n,p}(\alpha,\beta,\delta,\lambda,p)$ bagi fungsi analisis berpekali positif dalam bentuk $f(z) = z^p + \sum_{n=p+1}^{\infty} a_n z^n$ diperkenalkan. Beberapa sifat seperti ketaksamaan pekali, teorem erotan, jejari kebakbintangan dan kecembungan, teorem tutupan dan titik ekstrem diberi. Kelas mengekalkan pengoperasi kamiran juga dinyatakan.

Kata kunci: fungsi analisis; fungsi bakbintang; fungsi cembung; pengoperasi kamiran

References

- Altintas O., Irmak H. & Srivastava H. M. 1994. Family of meromorphically univalent functions with positive coefficients. *PanAmer J. Math.* **5**: 75-81.
- Ramadan S. F. & Darus M. 2011. On the Fekete-Szego inequality for a class of analytic functions defined by using generalized differential operator. *Acta Universitatis Apulensis* **26**: 167-178.
- Uralegaddi B. A. & Ganigi M. D. 1986. Meromorphic multivalent functions with positive coefficients. *Nepali Math. Sci. Rep.* **11**(2): 95-102.
- Cho N. E., Lee S. H. & Owa S. 1987. A class of meromorphic univalent functions with positive coefficients. *Kobe J. Math.* **4**: 43-50.
- Cho N. E., Owa S., Lee S. H. & Altintas O. 1989. Generalization class of certain meromorphic univalent functions with positive coefficients. *Kyungpook J. Math.* **29**: 133-139.
- Jinlin L. 2000. Properties of some families of meromorphic p -valent functions. *Mathematica Japonicae* **52**(3): 425-434.
- Liu J. L. & Srivastava H. M. 2001. A linear operator and associated families of mero-morphically multivalent functions. *J. Math. Anal. Appl* **259**: 566-581.
- Liu J. L. & Srivastava H. M. 2004. Classes of meromorphically multivalent functions associated with the generalized hypergeometric function. *Mathematical and Computer Modelling* **39**(1): 21-34.
- Joshi S. B., Kulkarni S. R. & Srivastava H. M. 1995. Certain classes of meromorphic functions with positive and missing coefficients. *Journal of Mathematical Analysis and Applications* **193**(1): 1-14.
- Raina R. K. & Srivastava H. M. 2006. A new class of meromorphically multivalent functions with applications to generalized hypergeometric functions. *Mathematical and Computer Modelling* **43**(3): 350-356.
- Aouf M. K. & Shammaky A. E. 2005. A certain subclass of meromorphically p -valent convex functions with negative coefficients. *J. Approx. Theory and Appl.* **1**(2): 157-177.
- Aouf M. K. 2012. A family of meromorphically p -valent functions with positive coefficients. *General Mathematics* **20**(1): 25-37.

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