

ON FEKETE-SZEGÖ PROBLEMS FOR A SUBCLASS OF ANALYTIC FUNCTIONS

(Berkenaan Permasalahan Fekete-Szegö bagi Subkelas Fungsi Analisis)

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ABSTRACT

The aim of this paper is to determine the Fekete-Szegö inequalities for a normalised analytic function $f(z)$ defined on the open unit disc for which $z(\mathcal{D}_{\lambda_1, \lambda_2, \delta}^{m, b} f(z))' / (\mathcal{D}_{\lambda_1, \lambda_2, \delta}^{m, b} f(z))$, $\delta, m, b \in \mathbb{N}_0$, $\lambda_2 \geq \lambda_1 \geq 0$ lies in a region starlike with respect to 1 and it is symmetric with respect to the real axis by using the operator $\mathcal{D}_{\lambda_1, \lambda_2, \delta}^{m, b} f(z)$ given recently by the authors. As a special case of this result, Fekete-Szegö inequality for a class of functions defined by fractional derivatives is also obtained.

Keywords: analytic function; starlike function; subordination; Fekete-Szegö inequality; derivative operator

ABSTRAK

Matlamat makalah ini adalah untuk menentukan ketaksamaan Fekete-Szegö bagi fungsi analisis ternormal yang ditakrif pada cakera unit terbuka dengan $z(\mathcal{D}_{\lambda_1, \lambda_2, \delta}^{m, b} f(z))' / (\mathcal{D}_{\lambda_1, \lambda_2, \delta}^{m, b} f(z))$, $\lambda_2 \geq \lambda_1 \geq 0$, $\delta, m, b \in \mathbb{N}_0$ terletak pada rantau bak bintang terhadap 1 dan simetri terhadap paksi nyata dengan menggunakan pengoperasi $\mathcal{D}_{\lambda_1, \lambda_2, \delta}^{m, b} f(z)$ yang diberi penulis baru-baru ini. Sebagai kes khas bagi hasil ini, ketaksamaan Fekete-Szegö bagi kelas fungsi yang ditakrif oleh terbitan pecahan juga diperoleh.

Kata kunci: fungsi analisis; fungsi bak bintang; subordinasi; ketaksamaan Fekete-Szegö; pengoperasi terbitan

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