

## SOME NEW INTEGRAL OPERATORS: SUFFICIENT CONDITIONS FOR THEIR UNIVALENCE

(Beberapa Pengoperasi Baharu Kamiran: Syarat Cukup untuk Keunivalenannya)

GEORGIA IRINA OROS, GHEORGHE OROS & ALINA ALB LUPAS

### ABSTRACT

In this paper we define the integral operators with the forms:

$$G_{\alpha,M}(z) = \left[ \frac{\alpha}{M} \int_0^z (g(u))^{\frac{\alpha}{M}-1} du \right]^{\frac{M}{\alpha}}$$
$$F_{\alpha,M}(z) = \left[ \frac{\alpha}{M} \int_0^z u^{\frac{\alpha}{M}-1} \left( \frac{g(u)}{u} \right) du \right]^{\frac{M}{\alpha}}$$
$$H_{\alpha,\beta,M}(z) = \left[ \frac{\beta}{M} \int_0^z u^{\frac{\beta}{M}-1} \left( \frac{g(u)}{u} \right)^{\frac{M}{\alpha}} du \right]^{\frac{M}{\beta}}.$$

The operators generalise some integral operators studied by Owa, Pascu and Pescar. The original results contained in the paper give sufficient conditions for the univalence of those integral operators.

*Keywords:* Analytic function; integral operator; univalent function

### ABSTRAK

Dalam makalah ini ditakrifkan pengoperasi kamiran dalam bentuk:

$$G_{\alpha,M}(z) = \left[ \frac{\alpha}{M} \int_0^z (g(u))^{\frac{\alpha}{M}-1} du \right]^{\frac{M}{\alpha}}$$
$$F_{\alpha,M}(z) = \left[ \frac{\alpha}{M} \int_0^z u^{\frac{\alpha}{M}-1} \left( \frac{g(u)}{u} \right) du \right]^{\frac{M}{\alpha}}$$
$$H_{\alpha,\beta,M}(z) = \left[ \frac{\beta}{M} \int_0^z u^{\frac{\beta}{M}-1} \left( \frac{g(u)}{u} \right)^{\frac{M}{\alpha}} du \right]^{\frac{M}{\beta}}.$$

Pengoperasi ini mengitlakkan beberapa pengoperasi kamiran yang dikaji oleh Owa, Pascu dan Pescar. Keputusan asal dalam makalah ini memberi syarat cukup untuk keunivalenan pengoperasi kamiran tersebut.

*Kata kunci:* Fungsi analisis; pengoperasi kamiran; fungsi univalen

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*Department of Mathematics*

*University of Oradea*

*Str. Universității No.1*

*410087 Oradea, ROMÂNIA*

*E-mail: georgia\_oros\_ro@yahoo.co.uk\*, gh\_oros@yahoo.com, dalb@uoradea.ro*

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\* Corresponding author