On Univalent Harmonic Mappings With Analytic Parts Starlike of Some Order

F. M. Sakar
Batman University
mugesakar@hotmail.com

S. M. Aydoğan
Istanbul Technical University
aydoganSM@itu.edu.tr

Abstract

Let $f(z) = h(z) + \overline{g(z)}$ be the sense-preserving harmonic mapping, then it satisfies non-linear elliptic partial differential equation $\overline{f}_{\overline{z}} = \omega(z) f_z$. In the current study the solution of this equation was investigated by using subordination method under the condition $\omega(z) = \frac{g'(z)}{h'(z)} = b_1 \frac{1-z^n\psi(z)}{1+z^n\psi(z)}$, $\psi(z)$ is analytic and $|\psi(z)| < a$, $(0 < a \leq 1)$ in the open unit disc $\mathbb{D} = \{z| \, |z| < 1\}$.

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