

**ON ONE REPRESENTATION OF ANALYTIC
FUNCTIONS BY HARMONIC FUNCTIONS***V. V. Karachik*

Let $u(x)$ be a function analytic in some neighborhood \mathcal{D} about the origin, $\mathcal{D} \subset \mathbb{R}^n$. We study the representation of this function in the form of a series $u(x) = u_0(x) + |x|^2 u_1(x) + |x|^4 u_2(x) + \dots$, where $u_k(x)$ are functions harmonic in \mathcal{D} . This representation is a generalization of the well-known Almansi formula.

Key words and phrases: polynomial, polyharmonic function, analytic function, Almansi's formula.

Karachik Valerij Valentinovich

Southern-Ural State University,
Chelyabinsk, 454080 Russia.

E-mail address: karachik@math.susu.ac.ru

Received

October 8, 2006

Translated into English:

Siberian Advances in Mathematics, V. 18, N 2, 103–117 (2008).