

Ya. A. Roitberg, Z. G. Sheftel'. **On approximation of a function on a manifold by solutions of elliptic boundary value problems** // Nelinejnye granichnye zadachi (Nonlinear Boundary Value Problems). – 1989. – **1**. – p. 86-90.

In a bounded n -dimensional domain G the following elliptic problem is considered: $Lu = f$, $B_j u|_{\partial G} = \varphi_j$ ($j = 1, \dots, m$); boundary conditions are not assumed to be normal. For any solution u of this problem we set $v_r u = (u|_{\Gamma}, \dots, D_\nu^{r-1} u|_{\Gamma})$; here $\Gamma \subset G$ is an open subset of $(n-1)$ -dimensional smooth manifold without edge; D_ν is a normal derivative to Γ . Let us arbitrarily change the function f in an arbitrarily small fixed sub-domain G (or arbitrarily change $\{\varphi_j\}$ on an arbitrarily small piece of ∂G). The question is investigated on the possibility of approximation of any function $\varphi = (\varphi_1, \dots, \varphi_r)$ defined on Γ by the vectors $v_r u$ obtained under such a change.