

N. A. Bobylev, A. M. Krasnosel'skii, M. A. Krasnosel'skii, A. V. Pokrovskii. **On some new ideas in nonlinear analysis** // Nelinejnye granichnye zadachi (Nonlinear Boundary Value Problems). – 1989. – **1**. – p. 22-26.

In this article some new approaches to the three problems are offered: the analysis of periodic oscillations of autonomous systems, the Fredholm theorems for quasilinear equations, and the study of bifurcation points of variational problems. In the first part of the article, new possibilities of application of rotation of a vector field to establishing non-local existence theorems for periodic regimes of autonomous systems are specified. In the second part, the classical Fredholm theorems are transferred to the quasilinear operator equations arising in mathematical physics. In the third part, the new approaches to the analysis of bifurcation points of extremals of variational problems and solutions of quasilinear elliptic equations and Hammerstein equations are stated.