

THE SYNTHESSES OF NUMERICAL METHODS OF COMPLEX ANALYSIS AND NUMERICAL-ANALYTICAL REPRESENTATIONS FOR SOLVING OF A CLASS OF NONLINEAR BOUNDARY VALUE PROBLEMS IN CURVILINEAR DOMAINS

Summary – The more efficient constructive approach to solving of nonlinear elliptic boundary value problems for doubly-connected curvilinear domains bounded by equipotential lines was developed on the basis of syntheses of the numerical methods complex analysis and numerical-analytical representations. Developed algorithm used to calculate the characteristic parameters of the filtering process in the shale layer and automatically solves the problem of choice of nodes and the construction of a dynamic grid, finding unknown parameters (the total flow, values speed, etc...).

Keywords: conformal (quasiconformal) mapping, method of summary representations, numerical-analytical representation, nonlinear boundary value problem, dynamic grid