Numerical study of the environmental and economic system through the computational heuristic based on artificial neural networks

ABSTRACT

In this study, the numerical computation heuristic of the environmental and economic system using the artificial neural networks (ANNs) structure together with the capabilities of the heuristic global search genetic algorithm (GA) and the quick local search interior-point algorithm (IPA), i.e., ANN-GA-IPA. The environmental and economic system is dependent of three categories, execution cost of control standards and new technical diagnostics elimination costs of emergencies values and the competence of the system of industrial elements. These three elements form a nonlinear differential environmental and economic system. The optimization of an error-based objective function is performed using the differential environmental and economic system and its initial conditions. The optimization of an error-based objective function is performed using the differential environmental and economic system and its initial conditions.