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MULTIDIMENSIONAL OPTIMIZATION WITH A GIVEN DISTRIBUTION OF RANKED VARIABLES FOR REDUCTIONG ELECTRICAL LOSSES IN THE ELECTRICAL NETWORK

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Authors
Trach I., Sevastjuk I.
Institute of Electrodynamics National Academy of Science of Ukraine,
pr. Peremohy, 56, Kyiv-57, 03680, Ukraine,
e-mail: trachi@ied.org.ua

Abstract

For multi-criteria multidimensional optimization with a given distribution of ranked variables applied to reduce the loss in the electrical network. Optimization of losses was carried out by determining the placement of capacitor banks. The method of consecutive concessions was proposed. As the first criterion used by the active losses. A formation of the solution set by first criterion was performed using modernized PSO-method. The second criterion is the ranked parametric distribution of the variables of the vector belongs to a class of non-linear exponential regression equation. The estimation of the parameters of the exponential regression equation for the ranked variables consisting of capacitors conductivity. The statistical reliability of the regression model is established. It was found that it is possible to install capacitors in the

electrical network, for which the distribution of the ranked variables vector conductivities refer to a class of nonlinear exponential equation. References 12, figures 2, table 1.

Key words: multi-criteria multidimensional optimization, method of consecutive concessions, distribution of ranked variables, loss of the electrical grid.

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