

CLUSTERING OF SECTIONS OF THE SMARTGRID NETWORK

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The paper examines the task of developing and improving intelligent multi-agent control systems that provide opportunities for intelligent online analysis of the electric power supply system, in which data control is carried out by the smart grid system [1–3].

During resurch, clusters of sections of the electrical network were formed, the output parameters of which are the main indicators of the quality of electrical energy in accordance with the accepted standards [4], namely the non-sinusoidal coefficient of voltages, the coefficient of asymmetry of supply voltages, reactive power of loads. Hierarchical clustering of sections of the power supply system was carried out, its results are summarized in the corresponding dendrogram.

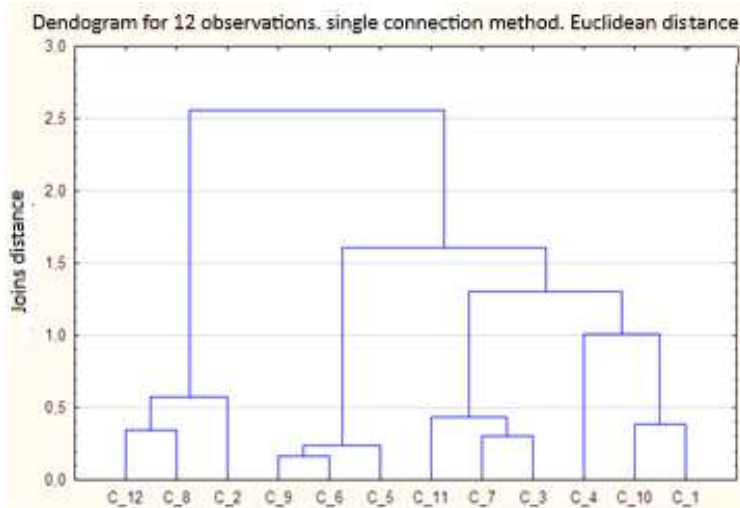


Fig. 1. Hierarchical clustering of sections of the power supply network

It is shown that the mathematical apparatus of cluster analysis allows solving the problem of correct classification of sections of the power supply system. It is proven that clustering can be performed not only by one parameter, but also by using a combination of two or three parameters.

References

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