

Subject

Fuzzy approach in simulation of malfunctions of elements of nets

Supervisors, contact, place of research

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Project description

In the literature, many models, which describe an occurrence of malfunctions of elements of nets in a random way, are known. Usually, these models are very precise and they take into account many physical factors and other parameters of elements of nets. Unfortunately, respective real data is considerably sparse, incomplete and usually imprecise in practice. Therefore, a simulation of behaviour of a net in an accordance with its reliability aspect, even a net with a simple topography, requires an aggregation of data or, e.g., application of experts' knowledge. Hence, it seems that the important research subject is to merge the simulation approach, which is based on sampling from a random distribution, with the imprecise approach in which data is described in fuzzy way and it requires, e.g., experts' opinions. Then, because of the convergence of these two approaches, a more complete description based on, e.g., the Monte Carlo methods, of important reliability parameters of a net, like its maintenance costs, will be possible.

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