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ACTIVE SHIELDING OF MAGNETIC FIELD OF OVERHEAD POWER LINE WITH PHASE CONDUCTORS OF TRIANGLE ARRANGEMENT

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Abstract

For the first time in Ukraine the synthesis of two degree of freedom robust two-circuit system of active shielding of magnetic field, generated by overhead power lines with triangle arrangements of phase conductors is realized to reduce the magnetic flux density down to the sanitary standards level and to reduce the sensitivity of the system to plant parameters uncertainty. The synthesis is based on the multi-criteria stochastic game solution, in which the payoff vector is calculated by the solutions of the Maxwell equations as a quasi-stationary approximation. The game solution is based on the stochastic multi-swarm particle optimization algorithms. The computer simulation and field experimental results of two degree of freedom robust two-circuit system of active shielding of magnetic field, generated by overhead power lines with triangle arrangement of phase conductors are presented. References 6, figures 3.

Key words: overhead power lines, triangle arrangement of phase conductors, magnetic field, system of active shielding, computer simulation, field experimental study.

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