

DOI: <https://doi.org/10.15407/techned2016.05.058>

FAULT INDICATORS LOCATION AND QUANTITY SELECTION ON DISTRIBUTION LINE AS A PROBLEM OF COMBINATORIAL OPTIMIZATION

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	№ 5, 2016 (September/Oktobor)
Pages	58 – 60

Authors

Ye.V. Parus, I.V. Blinov, O.Yu. Bets

Institute of Electrodynamics National Academy of Science of Ukraine,
pr. Peremohy, 56, Kyiv-57, 03680, Ukraine,
e-mail: igorblinov@mail.ru

Abstract

In the article the problem statement of fault indicators location and quantity selection on distribution line and methods of its solving are studied. The objective function is performed as the problem of maximization of charges differential of power supply utility when exploiting distribution line with/without fault indicators. The hierarchical nesting of combinatorial problems which is necessary for calculation of maximum of objective function is shown. The rules of thumb set for reducing of combinatorial level of the problem is proposed. References 6.

Key words: fault indicator, distribution line, combinatorial optimization.

Received: 14.02.2016

Accepted: 06.04.2016

Published: 13.09.2016

References

1. Jahedi A., Javidan J., Nasiraghdam H. Multi-objective modeling for fault indicators placement using of NSGA II to reduce off time and costs in distribution network. *Technical and Physical Problems of Engineering*. 2014. Vol. 6. Issue 21. No 4. Pp. 106–111.
2. Chin-Ying Ho, Tsung-En Lee, Chia-Hung Lin. Optimal placement of fault indicators using the immune algorithm. *IEEE Transactions on Power Systems*. 2011. Vol. 26. No 1. P. 38–45. DOI: <https://doi.org/10.1109/TPWR S.2010.2048725>
3. Akbari M., Ghaffarzadeh N. Optimal fault indicator placement in distribution networks using SFLA algorithm. *World Applied Programming*. 2014. Vol. 4. No 8. P. 181–192.
4. Shahsavari A., Mazhari S.M., Fereidunian A., Lesani H. A Fault Indicator Deployment in Distribution Systems Considering Available Control and Protection Devices: A Multi-Objective Formulation Approach. *Power Systems, IEEE Transactions*. 2014. Issue 5. Vol. 29. P. 2359 – 2369. DOI: <https://doi.org/10.1109/TPWRS.2014.2303933>
5. Salazar A., Zapata G., Garcia R. Fault-Indicator-Based Methodology for Distribution Power Systems Fault Location. Available at: <http://www.revistas.unal.edu.co/index.php/SICEL/article/viewFile/38589/43588>. (accessed 12.02.2016)
6. Edmonds J., Johnson E.L. Matching Euler tours and the Chinese postman problem. *Mathematical Programming*. 1973. No 5. P. 88–124. DOI: <https://doi.org/10.1007/BF01580113>

[PDF](#)