

DOI: <https://doi.org/10.15407/techned2018.04 . 094>

THE MANEUVER-NEW SYSTEM'S USE FOR PROBLEMS SOLVING OF THE OPTIMAL LOADING OF THE THERMAL POWER PLANTS' UNITS

Journal	Tekhnichna elektrodynamika
Publisher	Institute of Electrodynamics National Academy of Science of Ukraine
ISSN	1607-7970 (print), 2218-1903 (online)
Issue	No 4, 2018 (July/August)
Pages	94 – 97

Authors

O.V. Fesiuk^{1*}, P.I. Stetsyuk^{2}, O.F. Butkevych^{3***}**

^{1,2} – Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine,
40 Glushkov ave., Kyiv, 03187, Ukraine,
e-mail: sasha.fesyuk@gmail.com

³ – Institute of Electrodynamics National Academy of Sciences of Ukraine,
pr. Peremohy, 56, Kyiv, 03057, Ukraine,
e-mail: butkevych@ied.org.ua

* ORCID ID : <http://orcid.org/0000-0002-9308-0083>

** ORCID ID : <http://orcid.org/0000-0003-4036-2543>

*** ORCID ID : <http://orcid.org/0000-0002-6613-0911>

Abstract

Functionality features of the web-based system Maneuver-New that is designed for solving integer-valued, linear, and nonlinear programming problems, and its using for finding the optimal load of power units of thermal power plants are described. The results of comparison of

the obtained solution of the test task with the solution published abroad are presented. These results testify to the advantages of the developed Maneuver-New system. References 8, figures 2, tables 2.

Key words: thermal power plants units' optimal loading, ED- and UC-problems, NEOS-server, r algorithm.

Received: 02.03.2018

Accepted: 20.03.2018

Published:

References

1. Butkevych O.F., Rybina O.B. Optimization problems of the dispatcher control of territorially-distributed electric power objects and synthesis of the means for their solving. *Tekhnichna Elektrodynamika*. 2000. Temat. vypusk Problemy suchasnoi elektrotekhniki. Part 3. Pp. 99-103. (Rus)
2. Stetsyuk P.I. Methods of ellipsoids and r-algorithms. Chisinau: Evrika, 2014. 488 p. (Rus)
3. Hassan Z.G., Ezzat M., Abdelaziz A.Y. Solving unit commitment and economic load dispatch problems using modern optimization algorithms. *International Journal of Engineering, Science and Technology*. 2017. Vol. 9. No 4. Pp. 10-19. DOI: <https://doi.org/10.4314/ijest.v9i4.2>
4. NEOS Server: State-of-the-Art Solvers for Numerical Optimization. URL: <https://neos-server.org/neos/>
5. Shor N.Z. Minimization Methods for Non-Differentiable Functions. Berlin: Springer-Verlag, 1985. 178 p. DOI: <https://doi.org/10.1007/978-3-642-82118-9>
6. Tung N.S., Bhadoria A., Bhardwaj A. Start up Cost constraint Optimization using Lagrangian

Algorithm for Unit Schedule in Electrical Power System. *International Journal of enhanced research in Science Technology & Engineering*

. 2013. Vol. 2. Issue 1. Pp. 1-7.

7. Yuan X., Wang L., Zhang Y., Yuan Y. A hybrid differential evolution method for dynamic economic dispatch with valve-point effects. *Expert Systems with Applications*. 2009. Vol. 36. Pp. 4042–4048. DOI:

<https://doi.org/10.1016/j.eswa.2008.03.006>

8. Zivic Djurovic M., Milacic A., Krsulja M. A simplified model of quadratic cost function for thermal generators. *Proceedings of the 23rd International DAAAM Symposium*. 2012. Vol. 23. No 1. Pp. 25–28.

[PDF](#)