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Power Distribution Loss Reduction Using Cuckoo Search (Conference Paper)

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Abstract

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The distribution system has the most portion power loss compared to the transmission and generation systems. One of the effective methods to reduce the power loss in the system is by reconfiguring the existing network. In distribution system, there are two types of switches, which are sectionalizing switches and tie-switches. Reconfiguration process changes the status of those switches until the objective is achieved. In this study, the reconfiguration method is proposed for distribution system using the Cuckoo Search Algorithm (CSA) method. The system used is a standard IEEE 33-bus radial distribution system. The main objective is to reduce the power loss in the system while satisfying the distribution constraints. The proposed method is used to give an optimal configuration of distribution network for power loss reduction and its validity is done by comparing it with Particle Swarm Optimization (PSO). © 2018 IEEE.

SciVal Topic Prominence

Topic: Electric power distribution | Distributed power generation | feeder reconfiguration

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References (24)

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- 1 Elgerd, O.I., Van Der Puije, P.D.
The electric power network
(1998) *Electric Power Engineering*
Springer, Boston, MA

- 2 Jamian, J.J., Zaid, N.M.
Optimal distribution network configuration with interconnected photovoltaic system

(2014) *Asia-Pacific Power and Energy Engineering Conference, APPEEC, 2015-March (March)*, art. no. 7066167. Cited 3 times.

<http://ieeexplore.ieee.org/xpl/conferences.jsp>

doi: 10.1109/APPEEC.2014.7066167

[View at Publisher](#)

- 3 Lin, J., Magnago, F.H.
Electric power system
(2017) *Electricity Markets: Theories and Applications*, p. 352.
1, Wiley-IEEE Press

- 4 Alifah, Z.
Can Malaysia adapt to and embrace efficient power generation
(2017) *The Malaysian Reserve*
September 21st

- 5 Mansour, H.S.E., Abdelsalam, A.A., Sallam, A.A.
Optimal distributed energy resources allocation using ant-lion optimizer for power losses reduction

(2017) *2017 5th IEEE International Conference on Smart Energy Grid Engineering, SEGE 2017*, art. no. 8052823, pp. 346-352. Cited 2 times.

ISBN: 978-153861775-5

doi: 10.1109/SEGE.2017.8052823

[View at Publisher](#)

- 6 Saikia, B.J., Manas, M., Baruah, D.C.
Distribution loss reduction in a University of North East India through load factor improvement
(2015) *International Conference on Energy Systems and Applications, ICESA 2015*, art. no. 7503340, pp. 203-208. Cited 2 times.
ISBN: 978-146736817-9
doi: 10.1109/ICESA.2015.7503340
[View at Publisher](#)
-
- 7 Rajaram, R., Sathish Kumar, K., Rajasekar, N.
Power system reconfiguration in a radial distribution network for reducing losses and to improve voltage profile using modified plant growth simulation algorithm with Distributed Generation (DG) ([Open Access](#))
(2015) *Energy Reports*, 1, pp. 116-122. Cited 53 times.
<http://www.journals.elsevier.com/energy-reports/>
doi: 10.1016/j.egy.2015.03.002
[View at Publisher](#)
-
- 8 Suman, N., Somnath, R.
Network reconfiguration for electrical loss minimization
2011 International Journal of Instrumentation, Control and Automation, 1 (2), pp. 1890-2231.
-
- 9 Priyadarshini, R., Kori, S., Rekha, C.M.
Cuckoo search algorithm based multiple dg placement and voltage profile improvement in a radial distribution system
(2017) *Proceedings of the 2017 2nd IEEE International Conference on Electrical, Computer and Communication Technologies, ICECCT 2017*, art. no. 8118018.
ISBN: 978-150903238-9
doi: 10.1109/ICECCT.2017.8118018
[View at Publisher](#)
-
- 10 Sulaiman, M.H., Mustafa, Z.
Cuckoo Search Algorithm as an optimizer for Optimal Reactive Power Dispatch problems
(2017) *2017 3rd International Conference on Control, Automation and Robotics, ICCAR 2017*, art. no. 7942794, pp. 735-739. Cited 2 times.
ISBN: 978-150906087-0
doi: 10.1109/ICCAR.2017.7942794
[View at Publisher](#)
-
- 11 Makhloufi, S., Koussa, S.D., Pillai, G.G.
Cuckoo search algorithm for integration wind power generation to meet load demand growth
(2017) *Conference Proceedings - 2017 17th IEEE International Conference on Environment and Electrical Engineering and 2017 1st IEEE Industrial and Commercial Power Systems Europe, EEEIC / I and CPS Europe 2017*, art. no. 7977396. Cited 2 times.
ISBN: 978-153863916-0
doi: 10.1109/EEEIC.2017.7977396
[View at Publisher](#)
-
- 12 Chakrabarti, T., Sharma, U., Chakrabarti, T., Sarkar, S.K.
Extraction of efficient electrical parameters of solar cell using firefly and cuckoo search algorithm
(2016) *2016 7th India International Conference on Power Electronics (IICPE)*, pp. 1-5.
Patiala
-

13 Priyadarshini, R., Kori, S., Rekha, C.M.

Cuckoo search algorithm based multiple dg placement and voltage profile improvement in a radial distribution system

(2017) *Proceedings of the 2017 2nd IEEE International Conference on Electrical, Computer and Communication Technologies, ICECCT 2017*, art. no. 8118018.

ISBN: 978-150903238-9

doi: 10.1109/ICECCT.2017.8118018

[View at Publisher](#)

14 Aman, G.B.J.M.M., Solangi, K.H., Bakar, A.H.A., Mokhlis, H.

Optimum simultaneous dg and capacitor placement on the basis of minimization of power losses

(2013) *International Journal of Computer and Electrical Engineering*, 5, p. 7. Cited 23 times.

Oct. 2013

15 Dahalan, W.M., Mokhlis, H.

Network reconfiguration for loss reduction with distributed generations using PSO

(2012) *PECon 2012 - 2012 IEEE International Conference on Power and Energy*, art. no. 6450331, pp. 823-828. Cited 25 times.

ISBN: 978-146735019-8

doi: 10.1109/PECon.2012.6450331

[View at Publisher](#)

16 Jignesh, P.

Total losses in power distribution and transmission lines

2018, *EEP Electrical Engineering Portal*

[Accessed: 14-May-2018]

<http://electrical-engineering-portal.com/total-losses-in-powerdistribution-and-transmission-lines-1>

17 Yang, X.-S., Deb, S.

Engineering optimisation by cuckoo search

(2010) *International Journal of Mathematical Modelling and Numerical Optimisation*, 1 (4), pp. 330-343. Cited 1166 times.

doi: 10.1504/IJMMNO.2010.035430

[View at Publisher](#)

18 Oliveira, L.W., Oliveira, E.J., Silva, I.C., Gomes, F.V., Borges, T.T., Marcato, A.L.M., Oliveira, A.R.

Optimal restoration of power distribution system through particle swarm optimization

(2015) *2015 IEEE Eindhoven PowerTech, PowerTech 2015*, art. no. 7232828. Cited 3 times.

ISBN: 978-147997693-5

doi: 10.1109/PTC.2015.7232828

[View at Publisher](#)

19 Atteya, I.I., Ashour, H., Fahmi, N., Strickland, D.

Radial distribution network reconfiguration for power losses reduction using a modified particle swarm optimisation

(2017) *CIREd - Open Access Proceedings Journal*, 2017 (1), pp. 2505-2508. Cited 4 times.

<http://digital-library.theiet.org/content/journals/oap-cired>

doi: 10.1049/oap-cired.2017.1286

[View at Publisher](#)

□ 20 Kumar, S., Faizan Ur Rehman, C.K., Shaikh, S.A., Sahito, A.A.

Voltage improvement and power loss reduction through capacitors in utility network

(2018) *2018 International Conference on Computing, Mathematics and Engineering Technologies: Invent, Innovate and Integrate for Socioeconomic Development, iCoMET 2018 - Proceedings*, 2018-January, pp. 1-5.

<http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=8337998>

ISBN: 978-153861370-2

doi: 10.1109/ICOMET.2018.8346426

[View at Publisher](#)

□ 21 Saini, S., Kaur, G.

Real power loss reduction in distribution network through distributed generation integration by implementing SPSO

(2016) *International Conference on Electrical Power and Energy Systems, ICEPES 2016*, art. no. 7915902, pp. 35-40. Cited 3 times.

ISBN: 978-150902476-6

doi: 10.1109/ICEPES.2016.7915902

[View at Publisher](#)

□ 22 Nawaz, S., Bansal, A.K., Sharma, M.P.

A novel DG allocation method for power loss reduction in radial distribution system

(2016) *2016 IEEE 7th Power India International Conference, PIICON 2016*, art. no. 8077472.

ISBN: 978-146738962-4

doi: 10.1109/POWERI.2016.8077472

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Power system reconfiguration in a radial distribution network for reducing losses and to improve voltage profile using modified plant growth simulation algorithm with Distributed Generation (DG) ([Open Access](#))

(2015) *Energy Reports*, 1, pp. 116-122. Cited 53 times.

<http://www.journals.elsevier.com/energy-reports/>

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□ 24 Jamian, J.J., Zaid, N.M.

Optimal distribution network configuration with interconnected photovoltaic system

(2014) *Asia-Pacific Power and Energy Engineering Conference, APPEEC, 2015-March (March)*, art. no. 7066167. Cited 3 times.

<http://ieeexplore.ieee.org/xpl/conferences.jsp>

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