## Optimal location of distributed generation using intelligent optimization

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## ABSTRACT

This paper proposes a method for optimal placement of DG based on intelligent optimization technique namely particle swarm optimization (PSO). Electrical system loss is used as an index of the proper location and sizing considering the DG bus voltage limit. The results show a significant reduction in power losses and considerable voltage improvement of the IEEE-30 bus test system.

## **KEYWORDS:**

Distributed generation; intelligent optimization; Power losses

## REFERENCES

- C. Wang, M. Nehrir, "Analytical approaches for optimal placement of distributed generation sources in power systems," IEEE Transactions on Power Systems, vol.19, pp. 2068-2076, Nov.2004.
- 2. V. H. Mendez, J. Rivier, J.I. de la Fuente, T. Gomez, J. Marin and A. Madurga, "Impact of distributed generation on distribution investment deferral," International Journal of Electrical Power & Energy Systems, vol. 28, pp.244-252, May 2006.
- 3. S. H. Lee and J.W. Park, "Selection of optimal location and size of multiple distributed generations by using kalman filter algorithm," IEEE Trans. Power Systems, vol. 24, August 2009.
- 4. D. Gautam and N. Mithulananthan, 'Optimal DG placement in deregulated electricity market," Electric Power Systems Research, vol. 77, pp.1627-1636, Oct. 2007.
- 5. M. Sedighizadeh, A. Rezazadeh, "Using genetic algorithm for distributed generation allocation to reduce losses and improve voltage profile," Proceedings of World Academy and Science Conference on Engineering and Technology, vol. 27, February 2008.