Fayoum University

Faculty of Engineering

Department of Electrical Engineering

جامعة الفيوم

كلية الهندسة

قسم الهندسة الكهربية

S. M. Saleh, K. H. Ibrahim, and M. B. Magdi Eiteba, "Study of genetic algorithm performance through design of multi-Step LC compensator for time-varying nonlinear loads" Applied Soft Computing, Vol. 48, 2016, pp. 535–545.

بيانات عن البحث الخامس

Paper Title	Study of genetic algorithm performance through design of multi-Step LC compensator for time-varying nonlinear loads	عنوان البحث
No of Authors	**3**	عدد المؤلفين
Authors Names	**S. M. Saleh**, K. H. Ibrahim, and M. B. Magdi Eiteba	أسماء المؤلفين
Publication Place	Applied Soft Computing, Vol. 48, 2016, pp. 535–545.	مكان النشر
Publisher	**ELSEVIER**	الناشر
Classification	International Journal **مجلة دولية متخصصة ومحكمة**	التصنيف
Publication Details	Print-ISSN: 1568-4946 Website : http://www.sciencedirect.com/science/article/pii/S156849461630 3787 http://dx.doi.org/10.1016/j.asoc.2016.07.043	تفاصيل النشر
Publication Year	2016	سنة النشر
JCR/ SJR Impact Factor	– Thomson Reuters' ISI **Impact Factor of 2015 is: 2. 857** – Cited in Scopus, 2015 SJR: 1.763	معامل التأثير
Indexing	Applied Soft Computing is abstracted/indexed in all databases.	التواجد فى قواعد البيانات المختلفة

ملخص البحث الخامس

ملخص البحث باللغة الإنجليزية :

Genetic algorithm (GA) is a search mechanism simulating the natural selection and population genetics. The performance of GA is related to processing time and the number of generations required for convergence and the convergence itself. This article studies how the performance of GA is affected by choosing its parameters and implementation techniques through designing the multi-step LC based on performance criteria; maximizing the power factor (PF), minimizing the transmission loss (TL), or minimizing the voltage total harmonic distortion (VTHD). The multi-step LC compensator consists of switchable units thus assuming that a single unit is not sufficient to ensure satisfactory results. GA is used to estimate that steps while holding the performance quantities at the corresponding desired values and constraining the compensator values which would create resonance. The contribution of the proposed procedure is demonstrated in examples taken from previous publications. Finally, simulated results show the performance of GA is widely affected by choosing its parameters and implementation techniques and hence it could be improved.