

**Saber M. Saleh, Salah Hamdy EL-Hoshy, Osama E. Gouda, “Proposed diagnostic methodology using the cross-correlation coefficient factor technique for power transformer fault identification” accepted for publication in IET Electric Power Applications journal**

**بيانات عن البحث السادس**

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## ملخص البحث السادس

### ملخص البحث باللغة الإنجليزية :

This paper investigates the impact of electrical parameter variation of a high frequency transformer model on its SFRA signature to help in SFRA classification and interpretation. The simulations have been done using MATLAB, and to compare them with the reference data. The results of SFRA measurements made using the swept frequency measurements are repeatable up to and beyond 1MHz. The proposed diagnostic methodology using the Cross-Correlation Coefficient Factor (CCF) is used to identify the transformer faults. Using CCF is a measure of the degree of relationship between two variables which helps in establishing a relation between the predicted and actual data set. The results of the proposed diagnostic methodology using the CCF compared with existing Chinese Standard factor DL 911/2004 (CSF) indicate that, the proposed method is valid to identify the transformer faults. Characteristics of the proposed scheme are fully analyzed by extensive MATLAB simulation studies that clearly reveal that the proposed method can accurately identify the transformer faults compared with Chinese Standard factor. And also does not affected by different fault conditions such as transformer normal condition, Turn to Turn Fault for both HV, LV sides, Electromechanical forces on transformer windings included Axial Fault, Radial Faults on both sides, Short Circuit Fault between H.V and L.V Sides, Short Circuit to Ground Fault for both HV, LV sides.