

عنوان مقاله:

Comparison of circuit and circuit-field models for partial discharge localization in stator winding of electric machines

محل انتشار:

مجله تحقیقات نوین در برق، دوره 9، شماره 3 (سال: 1399)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

In this paper, the accurate localization of partial discharges (PDs) in winding insulation of high-voltage (HV) machines is investigated. Since partial discharges have frequency components ranging from kilohertz (kHz) to megahertz (MHz), it is necessary to employ transient models of electrical machines to locate PDs. In this study, PD current pulse with kHz frequency range is injected to RLC ladder network model of each coil turn of a cage induction machine (CIM), as interface between voltage sources and the finite element region. Analyses and comparison of experimental results with simulation results show that simulation of electrical machines, which use finite element method (FEM) with RLC interface between voltage sources and FE region (circuit-field model) can estimate the accurate location of PD in stator winding of electric machines.

کلمات کلیدی:

Partial Discharge Localization, High voltage machine insulation, Finite element analysis, Field and circuit transient

equations, مکان یابی تخلیه جرئی، عایق ماشین فشار قوی، روش المان محدود، معادلات گذاری مداری و میدانی.

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1182445>

