

عنوان مقاله:

Modeling of tape wound cores using reluctance networks for distribution transformers

محل انتشار:

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خلاصه مقاله:

Recently tape wound cores are widely used in line-frequency and high frequency applications. Spiral structure of these cores affects the flux distribution and always cause complication of analysis. In this paper, a model based on reluctance networks method is presented for analysis of magnetic flux in wound cores. Using this model, distribution of longitudinal and transverse fluxes within the core can be determined. To consider the nonlinearity of the core, a Preisach based hysteresis model is included in the presented model. Having flux density in different points of the core, hysteresis & eddy losses can be calculated. To evaluate the validity of the model, results are compared with 2-D FEM simulations and with experimental measurements. Comparisons show accuracy of the model besides simplicity and fast convergence.

کلمات کلیدی:

Nanocrystalline tape, Reluctance networks method, Static hysteresis loop, and Tape wound core

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