

عنوان مقاله:

A New method for Stray Capacitance Calculation of a Helical Magneto Cumulative Generator, having an n Turns, Single-Layer Coil, and Conductor Wires Filament in Hollow Circular Form

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خلاصه مقاله:

This paper presents a new method called vespiary regular hexagonal (VRH) model to calculate parasitic capacitance between conductor wire filaments of one turn of a coil and between conductor wires filament and liner and also total capacitance of n-turns having single-layers, multi-conductor wire filaments of the helix magneto cumulative generator (MCG) coil. The presented method is an analytical method and based on the geometrical structure of single-layer multi-conductor wire filaments with circular cross-section form in a turn of MCG coil. In this method, wire filaments of the MCG coil are divided into many very small similar elementary cells. In this structure, an equilateral lozenge shaped basic cell with two trapezium shaped regions is considered between the two adjacent conductor wire filaments in each turn of the MCG coil. This method can be applied to calculate stray capacitance of n-turns of coil with multi conductor wire filaments having the circular cross-sections and wires filament in each turn of the generator coil having wounded around linear and uniform in multi-layers in the hollow circular form and with a certain distance from the surface of the cylindrical metal liner which is placed axially in the center of the coil. Also it is seen that by the progress of the explosion and volume extension of liner and decrease of the number of MCG coil turns up to the second end turn, the total capacitance of generator increases and when it remains only one turn in the circuit, a descending decrease in total capacitance of the generator occurs.

کلمات کلیدی:

Vespiary Regular Hexagonal, Magneto Cumulative Generator, Stray Capacitance, Helical coil, مدل لانه زنبوری.

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