Abstracts

Generalized polygonal basis functions for the electromagnetic simulation of complex geometrical planar structures

L. Knockaert, J. Sercu and D. De Zutter. "Generalized polygonal basis functions for the electromagnetic simulation of complex geometrical planar structures." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 1249-1252 vol.2.

This paper describes the generalization of the well known rectangular and triangular rooftop functions to polygonal subdomains. The rooftop functions are commonly used for the discretization of planar currents in electromagnetic simulators. The new generalized polygonal functions allow for a more efficient meshing of complex geometrical structures in terms of polygonal shaped cells. They naturally model the current flow in the polygonal cells, satisfy the current continuity relation and their usage significantly enhances the electromagnetic simulation performance for complex geometrical structures. The increased simulation performance is demonstrated for a complex RF board interconnection layout.

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