Abstracts

A parallel FDTD tool for the solution of large dosimetric problems: an application to the interaction between humans and radiobase antennas

L. Catarinucci, P. Palazzari and L. Tarricone. "A parallel FDTD tool for the solution of large dosimetric problems: an application to the interaction between humans and radiobase antennas." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1755-1758 vol.3.

A rigorous theoretical solution of the human exposure to the near-field of radiobase antennas requires a heavy computational effort. In this paper, we propose a full-wave solution based on the implementation of a finite-difference time-domain method on parallel computers, such as the APE-Quadrics SIMD machine with 512 processors. The cases of several GSM real antennas interacting with a numerical phantom proposed by the Visible Human Project are solved, demonstrating the amenability of the approach and its accuracy for a point-evaluation of all the relevant parameters (E and H fields, as well as SAR or local currents) with millimeter-resolution.

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