

Abstracts

Absorbing boundary conditions for FDTD simulations of photonic crystal waveguides

A. Mekis, Shanhui Fan and J.D. Joannopoulos. "Absorbing boundary conditions for FDTD simulations of photonic crystal waveguides." 1999 *Microwave and Guided Wave Letters* 9.12 (Dec. 1999 [MGWL]): 502-504.

We present a novel numerical scheme for the reduction of spurious reflections in simulations of electromagnetic wave propagation in photonic crystal waveguides. We use a distributed Bragg reflector waveguide termination to reduce reflection from photonic crystal waveguide ends by improving k-matching for photonic crystal waveguided modes. We describe computational procedures and show that a significant reduction in reflection amplitude can be achieved across a large part of the guided mode spectrum. This method enables one to reduce simply and effectively the computational requirements in photonic crystal waveguide simulations.

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