

Abstract Submitted
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A global EMC/FDTD simulation tool for modeling THz wave interaction with conductive media¹ K. J. WILLIS, S. C. HAGNESS, I. KNEZEVIC, University of Wisconsin - Madison — We present a computational tool for modeling the interaction between THz electromagnetic waves and conductive media. By coupling the ensemble Monte Carlo (EMC) simulator of carrier dynamics and the finite-difference time-domain (FDTD) solver of Maxwell's equations, we have developed a robust and versatile global simulator that interactively tracks the field-particle dynamics. The global simulator enables accurate numerical examination of wave propagation in conductive media under circumstances in which macroscopic materials properties are not well established, such as under THz-frequency wave irradiation of highly doped semiconductors.

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