



# The Finite Difference Time Domain Method for Electromagnetics: With MATLAB Simulations

By Atef Z. Elsherbeni, Veysel Demir

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## The Finite Difference Time Domain Method for Electromagnetics: With MATLAB Simulations By Atef Z. Elsherbeni, Veysel Demir

The scope of the book is the fundamental techniques in the FDTD method. The book consists of 12 chapters, each chapter built on the concepts provided in the previous chapters.

In each chapter the details of the concepts are discussed at a graduate student level. Using this book, students will be able to construct a program with sufficient functionality to solve some basic problems. The construction of final equations is presented with a detailed step-by-step approach. In most cases the full-set of equations are provided.

While constructing the equations, the reader needs to visualize the positioning and orientation of field components in a three dimensional space. This is very difficult and usually requires extensive experience to be able to imagine the 3D space. Therefore, the book presents the construction of equations accompanied by a nice set of 3D illustrations. The figures greatly facilitate the understanding of the concepts.

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### **About the Author**

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Veysel Demir is an Associate Professor in the Department of Electrical Engineering at Northern Illinois University. He is a member of IEEE, ACES, and SigmaXi, has co-authored more than 50 technical journal and conference papers, and served as a technical program co-chair for the 2014 IEEE *International Symposium on Antennas and Propagation* and USNC-URSI Radio Science Meeting and for the ACES 2015 conference.

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