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VALU, AVX AND GPU ACCELERATION TECHNIQUES FOR PARALLEL FDTD METHODS

WENHUA YU, XIAOLING YANG AND WENXING LI

Combining complex electromagnetic problems with computer science techniques, this book introduces a general hardware acceleration technique that can significantly speed up FDTD simulations and their applications to engineering problems without requiring any additional hardware devices.

- The authors of this book were previously university researchers who built a successful commercial enterprise based on their superior computer performance in electromagnetics simulations and "number-crunching"
- The multi-core CPU computers and multiple CPU work stations are popular today for scientific research and engineering computing.
- This book introduces a general hardware acceleration technique that can significantly speed up FDTD simulations and their applications to engineering problems without requiring any additional hardware devices.
- Topics covered include cloud computing techniques, GPU acceleration techniques, VALU/AVX acceleration techniques and parallel processing techniques.
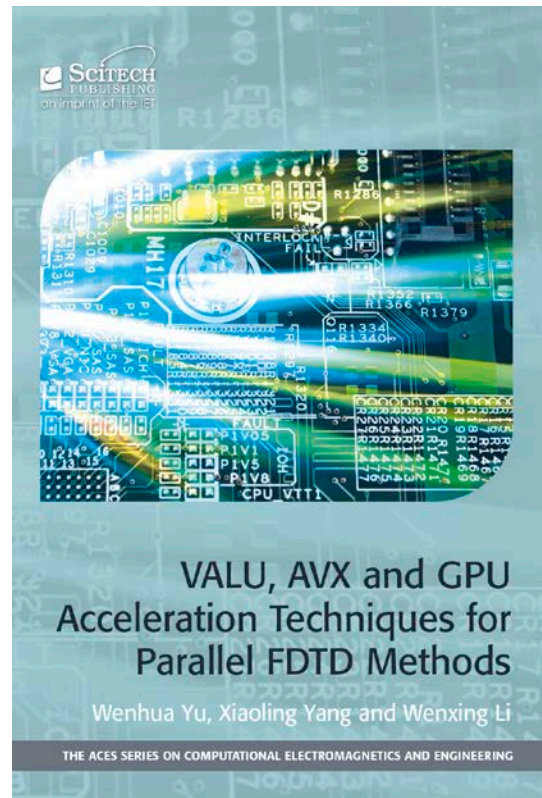
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READERSHIP

Academics with an interest in "computational electromagnetics" – the most complex problems and simulations that are run on computers. This book will also appeal to computer engineers who program and design the processing chips.

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AUTHOR INFORMATION

Dr. Wenhua Yu has published more than 150 technical papers and 6 books on the parallel FDTD methods and simulation techniques. Dr. Wenhua Yu and Mr. Xiaoling Yang are primary developers of the GEMS software package.
Prof. Wenxing Li is an expert in the computational electromagnetic method, antenna design, and electromagnetic compatibility.

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