

Computational EM Methods: Solvers, Applications and Future



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Abstract:

Computational EM methods, modeling, and simulation are fundamental tools in the design lifecycle of technologies such as cell phones, satellites, vehicles, and medical devices. Remcom engineers working with industry, government, research, and academia will share their experience with the ACES community.

The first session will include highlights of the use of Digital Twins in simulation and AI, including methods such as FDTD and Ray Tracing for antenna system design and performance. The second session will provide insights into leading computational EM research and frontier technologies in the Finite Difference Time Domain methodology.

Bio : Tarun Chawla received the B.S.E.E. degree from The Pennsylvania State University in 2008, and the M.B.A. degree from the University of Memphis in 2019. He is the Director of Business Development at Remcom, State College, PA, USA, with over 16 years of experience in hardware, middleware, and computational physics for electronics. His teams focus on integrating simulation tools for manufacturers in the semiconductor, consumer, automotive, and defense industries, including NASA. He works at the intersection of research and product engineering to support the development of AI-enabled wireless systems.

Bio: Apoorva Pedgaonkar is an Electromagnetic Research Engineer for Remcom, working as part of the XFDTD Research Team. She holds a Ph.D. in Electrical Engineering (Computational Electromagnetics) from the University of Utah, where her research focused on uncertainty analysis in FDTD and on FDTD modeling of power-line radiation through the magnetized ionosphere. Her industry experience spans multiple fields, including uncertainty quantification, signal and power integrity, and systems engineering for MRI technology.