VirginiaTech
VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Computer Science Seminar Series
National Capital Region

Advances in Numerical Electromagnetics with High Performance Computing

Speaker: Prof. Ozlem Kilic
The Catholic University of America
Friday, April 18, 2014
1:00PM- 2:00PM, NVC 325

Abstract

Modeling large-scale objects is a challenging problem in electromagnetics community due to the excessively heavy requirements of memory and computational resources. Since it has an important role in the research of target identification, or the stealth and anti-stealth technology, many numerical techniques have been developed over past two decades to reduce this burden without significant loss of accuracy. Conventional computational platforms have been exhausted, and researchers often resort to high performance computing (HPC). This talk focuses on using graphics processor based HPC platforms for numerically intensive electromagnetics applications. A few examples will be discussed in the context of their suitability for parallel programming techniques. These include interferometric imaging, optimization tools, human motion tracking in cluttered media, and full wave numerical modeling techniques such as Method of Moments.

Biography

Ozlem Kilic is an Associate Professor in the Department of Electrical Engineering and Computer Science of the Catholic University of America. Prior to joining CUA, she was an Electronics Engineer at the U.S. Army Research Laboratory, Adelphi MD. Dr. Kilic has over five years of industry experience at COMSAT Laboratories as a Senior Engineer and Program Manager with specialization in satellite, link modeling and analysis. Her research interests include numerical electromagnetics, antennas, wave propagation, satellite communications systems, and microwave remote sensing. She is an Associate Editor of IEEE Antennas and Propagation Magazine and Applied Computational Electromagnetics Society Journal. She serves as Member at Large for USNC-URSI.