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Material and RCS Measurements

Abstract

Recent technology (e.g., 3D printing) now allows rapid prototyping of ever-exotic materials and structures. Although computers can be used to predict electromagnetic properties and performance, measurements are almost always exclusively utilized for validation purposes. This AMTA Workshop will discuss the fundamentals of material and Radar Cross Section (RCS) measurements due to their importance in the principles of electromagnetic design. The workshop will include a balance of lectures and hands-on demonstrations to help impart the basics of material and RCS measurements.

Workshop outline:

- Lecture #1: Material Measurements (theory, calibration, measurement, etc.) (60 minutes)
- Demo #1: Material Measurement Demonstration (25 minutes)
- Extra #1: Any additional questions or additional hands-on experience (15 minutes)
- Lecture #2: RCS Measurements (theory, calibration, measurement, etc.) (60 minutes)
- Demo #2: RCS Measurement Demonstration (25 minutes)
- Extra #2: Any additional questions or additional hands-on experience (15 minutes)

key speakers

- Michael J. Havrilla received B.S. degrees in Physics and Mathematics in 1987, the M.S.E.E degree in 1989 and the Ph.D. degree in electrical engineering in 2001 from Michigan State University, East Lansing, MI. He is currently a Professor in the Department of Electrical and Computer Engineering at the Air Force Institute of Technology, WPAFB, OH. He is a Fellow of the Antenna Measurement Techniques Association and current research interests include electromagnetic theory, electromagnetic material measurements, and bianisotropic media.

- Stephen received his M.S. degree in Systems Engineering from the Georgia Institute of Technology, and his B.S. and M.S. degrees in Electrical Engineering Technology from the Southern Polytechnic State University. He is the vice president of Engineering at NSI-MI Technologies. In this role, he oversees all electrical, mechanical, software, chamber, and systems engineering activity for the development of sophisticated electromagnetic measurement systems. Stephen has more than 25 years of experience in antenna, radar signature, and materials characterization. He lectures for short courses on radar cross section measurement methods and is a vetted reviewer for the National Radar Cross Section Measurement Facility certification program.