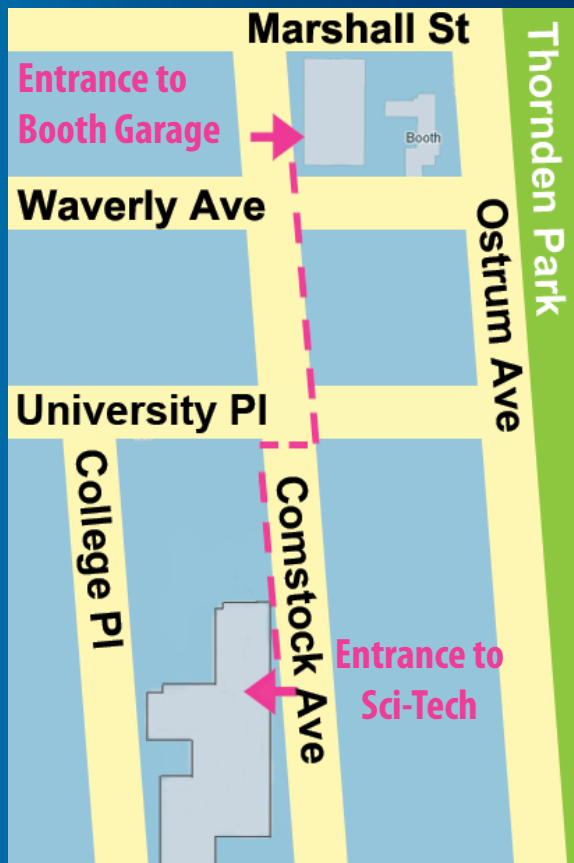# Thursday May 30, 2013
6 pm - 7:00 pm

Syracuse University
Center for Science and Technology (CST, Si-Tech)
Room 4-201

Parking is available in Booth garage. Please indicate you are attending a CASE event.

This event is organized by the Syracuse Chapter of the AP/MTT/EMC Societies of the IEEE. Additional support provided by The Center for Advanced Systems and Engineering and the L.C. Smith College of Engineering and Computer Science at Syracuse University.

An Exposition on the Choice of the Proper S-Parameters in Characterizing Devices Including Transmission Lines with Complex Reference Impedances and a General Methodology to Compute them.

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About the presentation

The purpose of this presentation is to demonstrate that the conventional S-parameters cannot be applied to devices having complex characteristic impedances as in some cases the reflection coefficient can be greater than one even when terminated by a passive conjugate load for maximum power transfer. This is particularly pertinent for antenna problems. Also, the expression for the transfer impedance becomes quite complex and not suitable for optimization for maximum power transfer. These artifacts do not exist when the power wave scattering parameters are used.

Finally, a general methodology with examples is presented to illustrate how the S-parameters can be computed for an arbitrary network without any a priori knowledge of its characteristic impedance and can be used when deembedding is required when when dealing with lossy transmission lines.