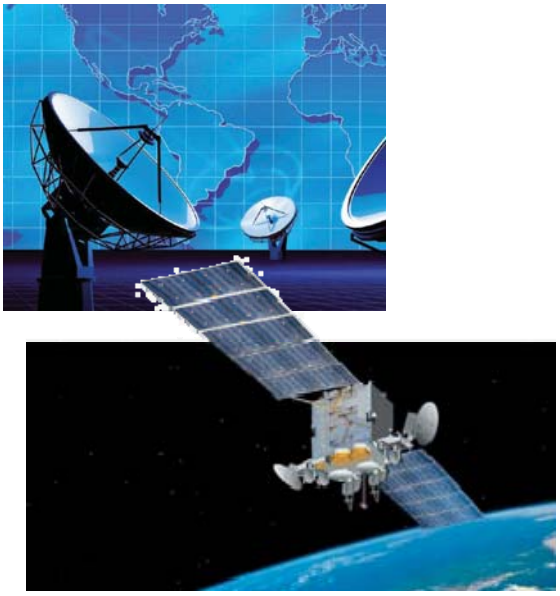
MICROWAVE THEORY AND TECHNIQUES SOCIETY

BUENA VENTURA SECTION

You are invited



Date/ Time: **Wed May 16th, 2012**
6:30 PM Pizza & networking
7:00 PM Presentation

Location: **Ciao Wireless**
4000 via Pescador
Camarillo, CA 93012

Speaker: **Arun K. Bhattacharyya**
Fellow of IEEE
Northrop Grumman Space Technology
Redondo Beach, CA

Title: **Efficient Shaped Beam Synthesis in Phased Arrays and Reflectors**

Abstract:

Shaped beam array synthesis invites considerable attentions because arrays offer the highly desirable “in-orbit reconfigurability” for communication and broadcasting satellites. This talk presents an overview of commonly used beam shaping algorithms, followed by the Projection Matrix Method of synthesis. The Projection Matrix method relies on orthogonal projection of the desired far field intensity vector onto the space spanned by the far field intensity vectors of the array elements. The method is employed successfully for a reflector surface synthesis and is shown to be several times faster than the gradient search method commonly used for beam synthesis. Numerical results for array and shaped reflector syntheses are shown and advantages are discussed. High efficiency horns as an array element will also be reviewed.

Arun K. Bhattacharyya received his B.Eng. degree in electronics and telecommunication engineering from Bengal Engineering College, University of Calcutta in 1980, and the M.Tech. and Ph.D. degrees from Indian Institute of Technology, Kharagpur, India, in 1982 and 1985, respectively. At the University of Manitoba, Canada, Arun was a Postdoctoral Fellow in the electrical engineering department. At Til-Tek Limited, Ontario, Canada Arun was a senior antenna engineer. At the University of Saskatchewan, Arun started as an assistant professor of in the EE Dept, later being promoted to associate professor rank in 1990.

In 1991, he joined Boeing Satellite Systems (formerly Hughes Space & Comm) as a senior staff engineer, and then to scientist, senior scientist, and Technical Fellow of Boeing in 2002. In 2003 he joined NG Space Technology group as a staff scientist, senior grade, later becoming a Distinguished Engineer which is a rare and honored recognition. Author of "Electromagnetic Fields in Multilayered Structures-Theory and Applications", Artech House, Norwood, MA, 1994 and "Phased Array Antennas, Floquet Analysis, Synthesis, BFNs and Active Array Systems", Hoboken, Wiley, 2006., as well as over 95 technical papers, 4 book-chapters and 15 issued patents. Dr. Bhattacharyya became a Fellow of IEEE in 2002. He is a recipient of the 1996 Hughes Technical Excellence Award, 2002 Boeing Special Invention Award for his invention of High Efficiency horns, 2003 Boeing Satellite Systems Patent Awards and 2005 Tim Hannemann Annual Quality Award, NG Space Tech

Directions to Ciao Wireless:

4000 Via Pescador
Camarillo Ca. Phone: 805-389-3224

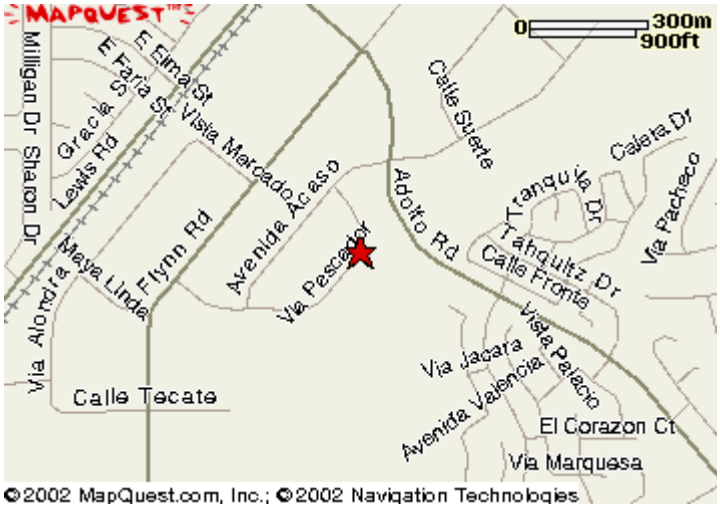
From LA and South

Take the I-405N.

Take the US-101/VENTURA FWY North

Exit FLYNN RD and go straight.

Turn RIGHT onto VIA PESCADOR. (2nd Road on RIGHT)



From Santa Barbara and North:

Take the US-101S/VENTURA FWY towards LOS ANGELES.

Take the DAWSON DRIVE exit and turn RIGHT from the ramp.

Turn RIGHT at the light onto DAWSON DRIVE.

Turn LEFT at the light onto FLYNN ROAD.
Turn RIGHT onto VIA PESCADOR. (2nd Road on RIGHT)