Seminar on

Some design techniques for broadband circularly polarized antennas

by

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Abstract

In this talk, some techniques for designing circularly polarized (CP) antennas are presented. First, one is to enhance the axial ration (AR) characteristics using a metasurface. The metasurface has both functions as an artificial magnetic conductor and a polarizer. Utilizing this characteristic, a conventional CP patch antenna can have a broadband characteristic in both impedance and axial ratio characteristics, respectively, even though the patch antenna can keep a low-profile structure.

Next is an aperture antenna using an L-shaped probe. This combination can generate circular polarization. In our group, we have some trials to fabricate a waveguide antenna to achieve a broadband characteristic and low cross polarization in a wide range of angle in the radiation pattern. The key techniques are to reduce the higher-order modes and to make the field distribution symmetrical. As a result, the obtained antenna can cover the UWB-high band with suitable AR and impedance.

Biography

Takeshi Fukusako was born in Miyazaki, Japan. He has received the B. Eng., M. Eng., and Dr. Eng. degrees from Kyoto Institute of Technology, Kyoto, Japan in 1992, 1994 and 1997, respectively. In 1997, he joined to the Kumamoto University, Kumamoto, Japan as a Research Associate. He is currently an Associate Professor and directing the Microwave & Antenna Laboratory since 2003. From 2005 to 2006, he was a visiting researcher of the University of Manitoba, Winnipeg, MN, Canada. His current research field is mainly antenna design, especially broadband antennas, circularly polarized antennas, electrically small antennas and their applications. He also works an Associate Editor of IEICE Trans. Comm. since 2012 and IEEE Trans. Antennas & Propagation since Feb. 2015.

Furthermore, he worked as one of TPC co-chairs in iWEM2014 and a TPC member in several conferences. He is a senior member of IEEE and IEICE.

Date : 14 April 2015 (Tuesday)
Time : 11:00 am – 12:00 noon
Venue : Room 15-202, 15/F, meeting room of State Key Laboratory of Millimeter Waves, 15/F, Academic 3, City University of Hong Kong

***** ALL ARE WELCOME *****

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