



THE CHINESE UNIVERSITY OF HONG KONG
Department of Electronic Engineering
Seminar



**Ultra-Wideband Radar Systems: Key Technologies
and Practical Applications**

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Date: 9 May 2024 (Thursday)

Time: 3:30 p.m.

Place: Rm 418, Ho Sin Hang Engineering Building, CUHK

Abstract

Ultra-wideband (UWB) radars are radars that use Ultra Wideband technology to transmit and receive short-time, low energy, wideband radio frequency signals reflected by target objects. UWB radars can be used practically in all cases where we need highly precise remote observation of moving objects at short distances. UWB radars can be used in automobile traffic control systems to prevent collisions while driving and parking. They can be also used in security systems as security signalling sensors, which provide detection of unsanctioned intrusion into the guarded area. UWB radars can be applied in a rescue service to detect people buried under building obstructions or snow slips by their movement; if a person is motionless, the detection can be performed using person's heart and thorax beats. UWB radars are useful in hospitals and at home where they can provide remote measuring heart and respiratory beats and other parameters of patient's vital activity. UWB radar can perform nondestructive control over building constructions, detect hidden communications in old buildings and so on. This talk will introduce the theory and principles of UWB radars. We will discuss key technologies for UWB radars such as antennas, digital signal processing and imaging, etc. Practical case studies will be illustrated.

Biography

Anxue Zhang is a Professor at Xi'an Jiaotong University (XJTU), Xian, Shaanxi, China. He is also the Director of Research Institute of Electromagnetics and Information Technology at XJTU.

His current research interests include antenna and EM wave propagation, intelligent radar signal processing, multiantenna communication systems, array signal processing, and UWB radar systems. He published over 300 papers and over 32 patents. Many of his research results have been practically implemented by the industries.

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

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