



演 講

Introduction of GPS/GNSS Radio Occultation for University Tiny Satellites

Speaker : 蔡永富 博士

國家太空中心副研究員

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摘 要 / Abstract :

GPS receiver has become one of the most important navigation systems for more than two decades. Though GPS system was designed for near Earth navigation originally, it's widely used in high dynamic environment such as Low Earth Orbit (LEO). In addition to the positioning, the GPS is utilized in earth remote sensing techniques, such as radio occultation and reflectometry. Radio occultation has been demonstrated its tremendous usages in atmospheric soundings by retrieving the temperature, pressure, and water vapor from the bending angle of GPS signal while passing through the atmosphere. Therefore it has become one of the important techniques for weather monitoring. The most successful mission is FORMOSAT-3/COSMIC, launched in 2006, co-developed by NSPO, Taiwan and UCAR, US. The follow-on radio occultation mission, FORMOSAT-7/ COSMIC-2, is a collaborating between NSPO, Taiwan and NOAA, US to replace the aged FORMOSAT-3/COSMIC. Although the dedicated radio occultation receivers for FORMOSAT-3 and FORMOSAT-7 are powerful, university tiny satellites could not cater such big size and high power consumption receivers. In this presentation, some fundamental aspects of GPS/GNSS will be mentioned. Some design trade-off and operation of the radio occultation mission will then be described.

講師簡歷 / Bio :

Yung-Fu Tsai received the B. S. degree from National Tsing-Hua University, Hsinchu, Taiwan in 2003 and the M. S. and Ph. D. degrees from National Cheng-Kung University, Tainan, Taiwan in 2005 and 2009, respectively. He was a postdoctoral fellow at the Department of Electrical Engineering, National Cheng Kung University, Taiwan, 2009~2012. He then joined Satellite Research Centre (SaRC), School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore as a senior research fellow for three and half years. Currently, he is an associate researcher at National Space Organization (NSPO), Taiwan. His research interests include GPS/GNSS navigation processing algorithm, radio occultation mission, and micro/nano experimental satellites.

※歡迎聽講※

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