

中央大學物理學系

Department of Physics, National Central University



## Colloquium

# Propagation Experiment using kurz-Above-band Radio in Low earth orbit (PEARL) CubeSats

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**Date: 2024/03/12 (Tue)**

**Venue: S4-625**

**Time: 14:00-16:00**

### Abstract

PEARL (Propagation Experiment using kurz-Above-band radio in Low earth orbit) mission consists of two 6U XL CubeSats, named as PEARL-1C and PEARL-1H, assembled, integrated, and tested by National Central University (NCU) and Hon Hai Precision Industry Co., Ltd. (Foxconn) for educational training/scientific research on earth-space radio propagation channel experiments over Taiwan. Two payloads, a Ka-band communication payload (KCP) for broadband communication experiment and a Compact Ionospheric Probe (CIP) for ionospheric plasma measurement, were installed on PEARL-1C. KCP was developed by Rapidtek Technologies and NCU to perform like a transponder, a transmitter, a transceiver, and a channel study with ground stations over Taiwan. CIP was an all-in-one in-situ ion sensor developed by NCU to measure global ionospheric ion concentration, velocity, and temperature. A Communication Payload (CPL) developed by Tron Future was installed on PEARL-1H for broadband communication experiment with beam-steering phase array antenna. These two CubeSats had been launched by SpaceX Transporter-8 rideshare mission on 2023/11/12 CST. Some preliminary results during launch and early orbit phase will be presented in this talk.