

POLYU Junior Researcher Mentoring Programme 2024



Code:	JRMP2024_03
School / Department:	Department of Land Surveying and Geo-Informatics
Name of Research Team Member(s):	Prof. George Liu Zhizhao, Associate Head (Partnership) and Professor
Research Topic:	Augmenting weather prediction using satellite remote sensing data
Short Description of the Research Project:	<p>Under the impact of global warming, extreme weather events are occurring more frequently than ever. Improving the reliability of weather forecasting has long been a challenge in the meteorological community. This project aims to improve weather forecasting services by developing advanced algorithms to assimilate satellite-based atmospheric water vapor data into modern numerical weather prediction (NWP) system.</p> <p>The Micro-Laboratory of Atmospheric Research and Geomatics Engineering (Micro-LARGE) led by Prof. George Zhizhao Liu has long been working on research and development of advanced algorithms for satellite-based atmospheric water vapor observation. Prof. Liu's Micro-LARGE Lab has successfully assimilated satellite-based Near-Infrared water vapor observation data into Weather Research & Forecasting Model (WRF) – an internationally widely NWP system. It is arguable to state that the Micro-LARGE Lab is the world's 2nd organization to successfully assimilate satellite-based Near-Infrared water vapor observation data into NWP system, just behind the U.K. Met Office. But the Micro-LARGE Lab's work is supposed to outform U.K. Met Office in two aspects: using all-sky water vapor data and calibrated water vapor data.</p> <p>In this junior researchers training program, the participating students will learn how to assimilate satellite-based remote sensing data into a computer-based NWP model to improve weather forecasting performance for Hong Kong, the Greater</p>

	Bay Area (GBA), and and the South China region. The participating students will have the opportunity to gain knowledge in remote sensing satellite data and advanced weather prediction.
No. of Places Offered:	2
Frequency of Meetings:	Monthly
Special Requirement(s):	The participating students should have good computer skills and good ability in English reading and writing.

** The information presented above is subject to change.*