



# LSGI RESEARCH SEMINAR

## Altimeter Methods for Interdisciplinary Satellite Geodesy

 **23 JAN 2024 (TUE)**

 **2:30 - 3:30 PM**

 **Z504, POLYU**

 **ENGLISH**

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### Abstract

Satellite altimetry was conceptualized in the 1969 Williamstown, Massachusetts, in a future program entitled *Solid Earth and Ocean Physics–Applications of Space and Astronomic Techniques* [Kaula, 1969]. The first spaceborne laser altimeter experiments were carried out by Apollo 15, 16, and 17 (1971–1972) lunar missions. GEOS-3 operated in 1975 deploying a radar altimeter, followed by Seasat in 1978 gathering global radar altimeter data for 3 months, Geosat (1985–1990) and Geosat-Followon (1998–2008). Since then, satellite altimetry has evolved into a unique and operational geodetic remote sensing measurement system with multi-missions and multi-satellite constellations generating an unprecedented continuous global climate data record since 1991 with ERS-1, and the ‘gold standard’ dual-frequency radar altimeter TOPEX/Poseidon, encompassing over three decades and in decades to come. Satellite altimetry has fostered seminal research in interdisciplinary geodesy and Earth sciences, and with new technologies including SAR (bistatic radar), laser altimetry, and interferometric altimetry including wide swath instrument on SWOT, ICESat-1/-2 laser altimetry, and multi-band (L and other frequency bands) signals of opportunity and other international (NASA, CNES, ESA, China, others) missions planned, are poised to enhance additional research and applications. This contribution shows examples of contemporary research and applications using a suite of satellite altimetry data and articulates the rationale to establish the International Association of Geodesy (IAG) International Altimetry Service (IAS).

### Biography

C K SHUM is a Professor and Distinguished University Scholar, Division of Geodetic Science, School of Earth Sciences, at the Ohio State University. He is a Fellow of the American Association for the Advancement of Science, and of the International Association of Geodesy. He received awards including his contribution to the 2007 Nobel Peace Prize Laureate as an Intergovernmental Panel on Climate Change (IPCC) Assessment Lead Author, co-shared by IPCC and Al Gore, Jr.; and the 2012 Vening Meinesz Medal from European Geosciences Union. He conducts research in interdisciplinary geodesy and Earth sciences, including sea-level and climate sciences.

**All are welcome! Limited seats are available, please register now to join us on-site!**

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