Seminar Presentation by:

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Measuring Coastal Subsidence through Geodetic Observations

Abstract

The contribution of Vertical Land Motion (VLM) to local and regional relative sea-level changes and coastal flooding in Low Elevation Coastal Zones (LECZ) is often significant. Its magnitude can be equal to or exceed the present and projected global or regional sea-level changes. VLM in LECZ is a complex response to a broad array of processes occurring over a wide range of spatial and temporal scales. Natural processes that cause VLM include short-term and long-term tectonic events that drive deformation on broad scales, Glacial Isostatic Adjustment (GIA), present-day water and ice mass redistributions, Sediment Isostatic Loading (SIA), natural sediment compaction, and peat soil oxidation. Long-term VLM, such as interseismic slip, GIA, SIA, and natural sediment compaction is often linear on centennial time scales. These processes reveal the local and regional short-term, seasonal, and decadal VLM which are important for understanding the non-linearity of VLM and its role in uncertainty assessment of relative sea-level projections. In this talk, I will provide an overview of geodetic methods for measuring these processes.