

GGOS Focus Area 3: Understanding and Forecasting Sea-Level Rise and Variability

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Sea level and its change have been measured for more than a century. Especially for coastal nations, deltaic regions, and coastal-oriented industries, observations of tides, tidal extremes, storm surges, and sea level rise at the interannual or longer scales have substantial impacts on coastal vulnerability towards resilience and sustainability of world's coastal regions.

To date, the observed global sea level rise is largely associated with climate related changes. To find the patterns and fingerprints of those changes, and to e.g., separate the land motion from sea level signals, different monitoring techniques have been developed. Some of them are local, e.g., tide gauges, while others are global, e.g., satellite altimetry. It is well known that sea level change and land vertical motion varies regionally, and both signals need to be measured in order to quantify relative sea level at the local scale.

The Global Geodetic Observing System (GGOS) and its services contribute in many ways to the monitoring of the sea level. These includes tide gauge observations, estimation of gravity changes, satellite altimetry, InSAR/Lidar, GNSS-control of tide gauges, providing ground truth sites for satellite altimetry, and importantly the maintenance of the International Reference Frame.

Focus Area 3 (Understanding and Forecasting Sea-Level Rise and Variability) of GGOS establishes a platform and a forum for researchers and authorities dealing with estimating global and local sea level changes in a 10- to 30-year time span, and its project to the next century or beyond. It presents an excellent opportunity to emphasize the global, through to regional and local, importance of GGOS to a wide range of sea-level related science and practical applications.

Focus Area 3 works through demonstration projects to highlight the value of geodetic techniques to sea level science and applications. Contributions under a call for participation (http://www.ggos.org/Applications/theme3_SL.html) are welcome.

The present status of GGOS Focus Area 3 will be highlighted.

http://www.ggos-portal.org/lang_en/GGOS-Portal/EN/Themes/SeaLevel/seaLevel.html