GNSS-IR Station Deployment for Enhanced Sea-Level Monitoring in Lieyu, Kinmen County

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SUMMARY

GNSS Reflectometry (GNSS-R) has proven to be an effective tool for measuring changes in sea surface height. It provides measurements directly referenced to the ellipsoid, making it ideal for sea-level rise monitoring. Additionally, the GNSS-R structure can be positioned above the water, reducing interference from sea waves and adverse weather conditions. In Lieyu, an island in Kinmen County situated between Taiwan and China, the daily tidal range typically reaches 6 meters. Traditional tide gauges, such as those based on pressure sensors and sonic instruments, face challenges from biological growth of marine organisms like barnacles, necessitating frequent maintenance. To address these challenges, a GNSS-R CORS (Continuously Operating Reference Station) has been deployed in Lieyu. This article discusses the site selection, equipment, and data analysis associated with this deployment.
