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Deformation Identification Using DinSAR Multi Temporal Analysis and Gravity Method in Supporting Infrastructure Development

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The lack of information regarding land structures that are prone to deformation can have an impact on the failure of infrastructure development in the New Capital City Region. Therefore, it is necessary to conduct a study on the deformation that occurred in the area, as initial information in determining the location for safer infrastructure development based of the soil structure. This study uses the DinSAR (Differential Interferometry Synthetic Aperture Radar) method which will be analyzed multi-temporally, and combined with the gravity method to estimate the value of Simple Bouguer Anomaly (SBA) to determine the subsurface structure in the study area. The data used are SAR image of Sentinel 1A type SLC C band for the period 2015-2019 and the gravity anomaly model data Free Air Anomaly (FAA). The results obtained indicate that deformation has been identified in several areas with the maximum decrease is 12.97 cm and the maximum increase is 10.01 cm. Areas identified with land subsidence generally have relatively lower SBA values and thus have weaker soil structures. Areas that experience uplifting generally have a relatively higher SBA value than the surrounding area, and can also become areas for deposition of sedimentary material deposits.

Promotional text

I conducted research to map areas that are prone to deformation in the Indonesian New Capital City . By using the DinSAR remote sensing method and the gravity method

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