

# **Validation of EGM2008–Based Orthometric Heights in a Micro Environment in Nigeria**

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**Key words:** GNSS/GPS; Positioning; EGM2008; Orthometric height; micro environment; spirit levelling

## **SUMMARY**

The Earth Geopotential Model of 2008 (EGM2008) is the latest effort by NIMA (National Imagery and Mapping Agency, USA) at generating an accurate global geoid height model which will facilitate accurate conversion of geocentric ellipsoidal heights to their corresponding orthometric equivalent. This paper evaluates the accuracy of the EGM2008 model in a 23 hectare micro-environment located within the compound of the University of Nigeria, Enugu Campus. The validation was done by comparing EGM2008-based orthometric height differences with height differences determined from spirit levelling. GNSS and spirit levelling measurements were taken on nine validation points. Results obtained indicate an accuracy of  $\pm 0.188\text{m}$  (std. dev) for EGM2008 within our study area. Key words: EGM2008, Orthometric heights, micro-environment, GNSS, Spirit-levelling