

Results of validation of the National Geospatial-Intelligence Agency's spherical harmonic coefficients model PGM17 over CONUS

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The PGM17 gravity model is validated through the following independent data sets: 1) two geoid slope validation surveys, GSVS11 and GSVS14 over Texas and Iowa, respectively; 2) a nationwide dataset of GPS on benchmarks; 3) mean lake surface heights from satellite altimetry over the Great Lakes, 4) GPS on tide gauges; and 5) land gravity and deflections of vertical. All of the comparisons are over CONUS and it is done in an absolute and relative sense, and in terms of geoid slopes.

The harmonic coefficients model xGEOID17 RefB is also compared with PGM17 to show the similarity and differences of both models over the xGEOID region (from 5 to 85 degrees in latitude, and 170 to 350 degrees in longitude). At the same time, EGM2008 is also included as a control for the model comparisons.