Deviation of the Japanese vertical datum with respect to the global geoid

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The deviation of the Japanese vertical datum from the geoid is discussed. The analysis method is based on Rapp (1994); GPS-derived geoid heights at some 800 benchmarks (BMs) are compared with the geoid undulations calculated from a global geopotential model, EGM96. The differences show that the main islands can be divided into two parts, Kinki-Chugoku-Shikoku area and the rest, each of which has the similar value of mean area differences and that the discrepancy between the two amounts to 50cm. In the area of approximately 300 km by 300 km around the vertical datum station, the mean location of the datum is 14cm below the EGM96 geoid.