

Determination of geopotential value over Japan for contribution to the International Height Reference Frame

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The International Height Reference Frame (IHRF) is a vertical coordinate system referred to the global mean sea level surface (W0), realized based on globally unified standards and conventions. The motivation of IHRF is to realize a society that the global heights (orthometric height, normal height, ellipsoidal height, etc.) are available with centimeter accuracy, as well as to accurately monitor minute global changes such as global sea level rise. The initiative of IHRF was issued as a resolution at the International Union of Geodesy and Geophysics (IUGG) 2015 meeting, and the first version of IHRF (IHRF2019) will be released soon. IHRF2019 consists of 165 reference stations in the world, three of which (Wakkanai, Ishioka, and Osumi) exist in Japan. In this study, we introduce the details of the current IHRF stations in Japan and report the estimated gravitational potential values over Japan with an eye on the future densification of the IHRF stations in Japan.

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