

## Abstract Submission

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Suggested Topic	GPS & Photogrammetry (GPS Application)	
Title of the paper	Determination of vertical displacements in Korea height system using GPS-levelling and tide gauge data	
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Preference for Oral and poster presentations	Poster	
<b>Abstract (Abstracts are limited to 300 words)</b>		
<p>This paper is preliminary study for redefinition of vertical datum in South Korea. The Vertical Datum in South Korea has been enacted MSL(mean sea level) at Incheon. In the Korean National height system, the original bench mark has defined 26.6871m over MSL at Incheon. Recently the original bench mark is assumed that it has been determined by tide gauge data, 1914 through 1916. Hence we evaluated displacement of vertical datum within a certain period of time. For this, we recalculated the original bench mark using GPS-levelling data, precise gravimetric geoid model and tide gauge data at Incheon. Using tide gauge data for 9 years ; 1999 through 2007, we determined orthometric height of one control point. After then GPS-levelling data were used to correct the relative difference between GPS-levelling derived geoid height and gravimetric geoid height about fixed point. The final height of the original bench mark was determined by fitting the fixed point. As the result, the vertical displacement of the original bench mark was -0.1268m(std:±0.0068m). It appears that the original bench mark needs to redefine a new value in the Korean height system.</p>		