

An absolute gravimeter climbs to the top of Mt. Fuji

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It was Mendenhall who first measured the absolute gravity value on the top of Mt. Fuji in 1880.

Since that time, several relative gravity measurements have been carried out (Yokoyama and Tajima 1960; Satomura et al. 1991). As pointed out by Satomura et al. (1991), there still remains 2 mgal disagreement among measured values. We transported the state of the art FG5 absolute gravimeter FG5#212 to the top of Mt. Fuji in August 2003 to give the definite gravity value there.

After applying geophysical corrections (barometric correction/ocean tide/polar motion), we obtained 978867.6569 ± 0.00020 [mgal]@130cm above the floor of JMA weather station. Relative gravity measurement between the absolute gravity point and the Kengamine triangulation point (KTP) gives us $g=978865.398 \pm 0.003$ microgal at KTP, which is consistent with Satomura et al.(1991).

In this talk, we shall also describe tips to avoid technical problems for absolute gravity measurements at an unusual site as the summit of Mt.Fuji.