

Gravity observations around the Ontake Volcano (Campaigned absolute and Continuous relative)

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We have been conducting absolute gravity measurements at the foot of the Ontake Volcano (approximately 10km away from the mountain top in the direction of southeast) since 2004. We initially intended to detect gravity changes of hydrothermal origin in and around the seismic swarm area. Therefore, those observations were not suited to detect mass change just beneath the mountain top. However, according to the phreatic explosion in 2014, we searched new observation hubs closer to the mountaintop and have started to carry out hybrid gravity observation and continuous relative gravity measurement. As of this moment, we have not detected remarkable gravity change caused by volcanic activity. But, we have accumulating some important findings such as the relationship between accumulated precipitation for a few days and campaigned observation values of absolute gravity, atmospheric correction (attraction and loading deformation) at a highland, and so on. Taking these into account, we will report trials of sophistication of mobility-based observation by combination of continuous spring-type relative gravity and absolute gravity measurement campaigns. Acknowledgements: This work is collaborated by Y. Miyagi (NIED) and Nagoya Univ. staffs (especially, M. Furumoto, T. Sagiya, T. Okuda, and S. Horikawa). We are grateful to the Mitake education office in Kiso town, Ontake Golf & Resort Hotel, and Ontake Resort Inc. for providing observation facilities.

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