

Re-uplift of Jigokudani, Tateyama volcano, revealed from leveling survey —September 2020–September 2021—

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Leveling surveys were done in Jigokudani valley, Tateyama volcano, since 2015. Bench marks, which were set along the walkway of the valley, showed subsidence up to 5.6 cm during the four-year period from September 2016 to September 2020. Subsidence was started in 2017–2018 when a new crater was formed at southwestern area of Jigokudani. A dislocation source model by Okada (1992) was applied to the subsidence and a closing crack was obtained (Hotta et al., accepted). During the period from September 2020 to September 2021, ground of Jigokudani was revealed to have re-uplifted (Hotta et al., VSJ fall meeting 2021). Since this deformation cannot explain by the crack obtained for the four-year period from September 2016 to September 2020, we applied a Mogi-type spherical source model (Mogi, 1958). An inflation source was located south of the Koya jigoku and the new fumarolic area where violent fumarole activities have been continued. Its depth was 75 m from the surface and volume change was + 2,100 m³. Because of the simplicity of the applied model, we should consider other models in the future study.

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Keywords: Tateyama volcano, Jigokudani valley, leveling survey, deformation source