

# Lateral Variations of Gravity Anomaly Roughness in Southwest and Central Japan

# Takeshi Kudo[1]; Akihiko Yamamoto[2]; Muneyoshi Furumoto[3]; Ryuichi Shichi[4]

[1] TGC,JNC; [2] Institute of Seismology and Volcanology, Hokkaido Univ.; [3] Natural Sci. and Tec., Kanazawa Univ.; [4] Coll. Eng., Chubu Univ.

We investigate the relationship between the distributions of topographic lineaments and the lateral variations of gravity anomaly roughness (GAR) in Southwest and Central Japan. In addition, we attempt to interpret the GPS-derived strain structure by dense GPS network in terms of GAR to discuss its relevance to short time-scale movements. Generally, tectonic movement may disturb lateral continuities of crustal structures at weak zones. These lateral discontinuities of the density structure cause undulations of gravity anomaly field whose complexity can be an indicator of past crustal instability. On the other hand, topographic lineaments are formed along weak crustal zones. We would expect therefore that GAR has some relation to surface lineaments distributions. As an index of GAR in terms of which we interpret spatial distribution of topographic lineaments, we employ Bouguer anomaly standard deviation inside a circular region with adequate radius. The applicability of the present method, which is tested in a gravity data set in Southwest and Central Japan, is demonstrated by (1) positive correlations of frequency of lineament points with the GAR and by (2) good correlations of locations of topographic lineament with those of the high GAR areas of gravity field.