

Gravity anomalies and subsurface structures in and around the focal area of 2007 Noto peninsula earthquake

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We report about the relationship between aftershock distributions and gravity anomalies around the focal area of 2007 Noto peninsula earthquake.

Gravity anomaly based on existing data shows low anomaly zone which runs along northern side coastline of Noto peninsula. The gravitational depression is about 4 mGal, the width of which is about 3 km. It is 3 mGal/km as horizontal gravitational gradient. This can be said to a quite small horizontal gradient of gravity anomaly, compared to those observed around Ohchi plane (10 mGal/km). So we haven't been aggressively affirming this as a steep gravity gradient zone.

We compared aftershock distributions and the gravity anomaly (Figure). It seems the shallow aftershocks distribute center, or south of this low gravity anomaly zone. Aftershocks shows southern dip. The southern rim of the aftershock distribution seems to coincide with the high gravity anomaly zone, but it is still ambiguous. The maximum aftershock occurred in the evening of March, 25 locates at the west end of another low gravity zone which extends from Anamizu town.

Northern Noto district is covered with thick sediments mainly consists of tuff-breccia, which makes it difficult to understand geologic structures.

We analyzed the subsurface structure with constraint using fault plane model of this earthquake, borehole data and surface geology data, to clarify the geometric relationship between the low gravity zone and the fault plane.

We couldn't have an argument with almost half of the focal area, because of the low accuracy of the oceanic data.

