

Gravity measurements in and around the Seto Inland Sea

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1991 Fiscal Year Final Research Report Summary

Gravity measurements in and around the Seto Inland Sea

Research Project

Project/Area Number

02640303

Research Category

Grant-in-Aid for General Scientific Research (C)

Allocation Type

Single-year Grants

Research Field

固体地球物理学

Research Institution

Kanazawa University

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1990 - 1991

Keywords

Seto Inland Sea / Gravity Anomaly / Subsurface Structure / Bouguer Anomaly / Marine Gravity Measurements / Unzen-Tsuruga Line / Unzen-Tsuruga Low Gravity Anomaly Zone

Research Abstract

According to one of the author's compilation of gravity data all over the Japanese Islands (KONO and FURUSE, 1989), the Seto Inland Sea is one of the biggest vacant region of gravity data. This region is geologically important since the Median Tectonic Line and zonal distribution of many geological units are exist.

We carried out gravity measurements from both land and sea side by using Lacoste & Romberg gravimeter on land and TSSG gravimeter on sea. We accessed even small islands such uninhabited islers by employing a small boat on RV. Onokoro-maru (6.5 ton) of Marine Research Laboratory, Faculty of Science, Kobe univesity. Marine gravity measurements were carried out by using R. V. Tansei-maru (650 ton) of Ocean Research Institute, university of Tokyo, all over the Seto Inland Sea.

600 gravity stations were increased in this area on land (islands) and 6, 000 points on sea.

After data reduction, detailed gravity anomaly map over the Seto Inland Sea were obtained. This map indicates several new findings of gravity distribution in this region. The most relevant finding is a continuation of low gravity anomaly zone at least from the Beppu-wan to Osaka-wan through the northern part of Shikoku island. Southern wedge of this low gravity anomaly zone is roughly coincide with the Median Tectonic Line but do not continue to the Kii peninsula but to the Osaka plain and furthermore to the Lake Biwa and the Tsuruga peninsula.

As a by-product of this study, we found a crater-like low gravity anomaly distribution in the south of Takazatsu, Kagawa prefecture. This may be explained by either an impact or volcanic crater.

Research Products (4 results)

All Other

All Publications (4 results)

[Publications] 河野 芳輝,藤本 博巳,小泉 金一郎,西山 吉介,大野 一郎: "瀬戸内海の重力異常" 地震. ▼

[Publications] 小泉 金一郎,藤本 博巳,富士原 敏也,河野 芳輝,中田 正夫,大野 一郎,井口 博夫,志知 龍一,名和 一成,長尾 年恭,朝井 与志哉,内津 将: "瀬戸内海における海上重力測定" 測地学会誌. ▼

[Publications] "Gravity Anomaly in and around the Seto Inland Sea, Western Japan" Zisin (J. Seismol Soc. Japan). (1992) ▼

[Publications] "Marine Gravity Measurements over the Seto Inland Sea, Western Japan" J. Geod. Soc. Japan. (1992) ▼

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