3D gravity basement structure of the eastern part of reclaimed land in the Okayama plain, west Japan

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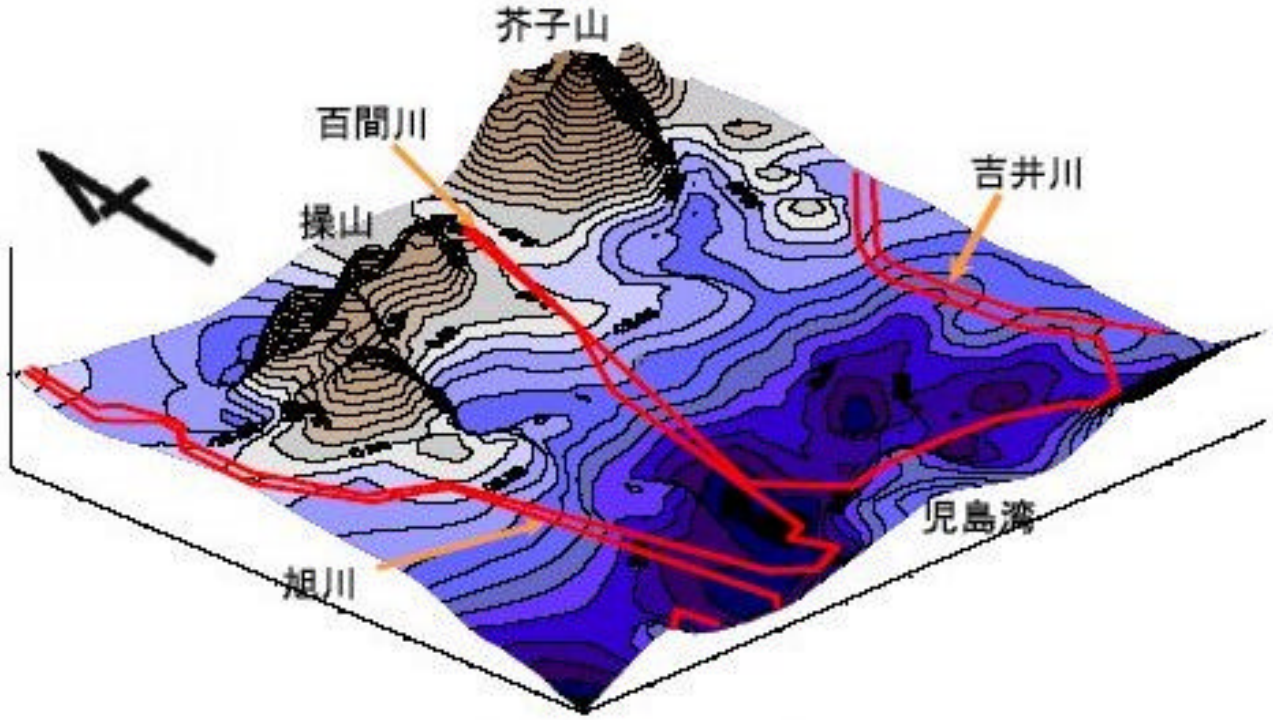
The great Nankai earthquake (M8.0) of December 21, 1946, brought heavy damage to the Okayama plain, west Japan, despite a large epicentral distance exceeding 200km. Most of the damage was concentrated in reclaimed land located in the southern part of the plain. Although the liquefiable shallow soil layer of the reclaimed land is considered to have been responsible for the earthquake disaster, it is highly probable that the configuration of bedrock produced a significant influence on ground motion during the earthquake. Taking this into account, we estimated 3D basement structure of the eastern part of the reclaimed land by modeling gravity anomalies obtained through precise measurements. The resultant structural model shows that, there is a step-like change in the configuration of bedrock between the northern and southern parts of the study area. It is important to note that, the depth to bedrock is more than 100m in the southern part where the damage to houses was remarkably heavy during the Nankai earthquake. Thus the 3D structural model obtained in this study is believed to provide a basis for producing a seismic-risk map, helpful to preparedness for forthcoming great earthquakes.



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