Re-analysis and re-interpretation of the very shallow land seismic reflection survey data across the Naruto-South fault, north side of Tokushima Plain.

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We conducted re-analysis and re-interpretation of the very shallow land seismic reflection survey data across the Naruto-South fault, north side of Tokushima Plain. In this study, we show that more detailed active fault structures are obtained by re-analysis and re-interpret old data to give useful information for urban disaster planning. The Naruto-south fault is located in Tokushima Prefecture, the eastern part of Shikoku island, Japan. It is the branch of the Median Tectonic Line (MTL) active fault system. The Naruto south fault is situated 500m to 1000m south of Naruto fault, and cut the Tokushima alluvial plain. The length of the it is expected about 8km (Tokushima Prefecture, 1998). The last faulting event is in 16th century or later. The probability of earthquake indicated the MTL active fault is very low, 0 to 0.4% within 30 years. In the other hand, the expected magnitude of earthquake is very high, 8, and, when the earthquake are occurred, its damage will be tremendous. From this fact, to minimize damages, the clarifying fault structure is required. So, we re-analyze and re-interpret the very shallow S-wave land seismic reflection survey data across the Naruto-South fault acquired in 1998 to obtain more detailed structure of the fault. Measurement length is 100m, receiver spacing is 0.5m and shot source interval is 1.0m. S-wave portable vibrator is utilized for seismic source. Sweep frequency is 40 to 300Hz and sweep length is 7s. As the result of re-analysis, we obtained more detailed active fault structure less than 50m depth. In this study, we can identify the position of the about 70 degrees dip fault, lied from 15m to 50m depth, with more resolution. Also, we achieved to show the continuous structure, not cut off by the active fault, more clearly than conventional. Also, by applying the dating method results, we could estimate the displacement of fault. Maximum displacement is 14.4m, 10.8kyBP to 12.2kyBP, and deformation rate is 1.77mm/yr.

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