

HDS024-P06

Room: Convention Hall

Time: May 25 17:15-18:45

Accuracy of GIS-based tectonic-geomorphological data of the ISTL active fault zone

Satoshi Ishiguro^{1*}, Yasuhiro Suzuki², Nobuhiko Sugito², Hiroshi Sawa³, Kaoru Taniguchi⁴, Chikara Uchida⁵, Hiroyuki Sakaue⁶, Research Group for ISTL Tectonic Landforms¹

¹Nagoya University, ²Graduate School of Environmental studies, ³Tsuruoka National College of Technology, ⁴AIST, ⁵Tamano Consultants Co., Ltd., ⁶Falcon Corporation

As part of the integrated research project on the Itoigawa-Shizuoka Tectonic Line fault zone sponsored by MEXT, Japan (2005-2009), we have generated a GIS-based dataset that includes active fault line data and geomorphological characteristics by carrying out tectonic-geomorphological investigations comprising field surveys and interpretation of aerial photographs. A dataset has been generated for the entire area of the active fault zone, and it will be released in March, 2010, on the WebGIS (Sugito et al., this meeting).

The positional accuracy of active fault line data obtained in this study is expected to be very higher than that of existing active fault charts, because these data are not obtained by the digitization of copied trace lines of topographical maps generated from aerial photographs, but directly traced in a photogrammetry system. On the WebGIS, all data can be seamlessly zoomed in to very large scales; therefore, the accuracy of these data should be examined. We have conducted GPS surveys to estimate the accuracy of the active fault line data, which is generated by using photogrammetry.

We have selected 22 sites where we can clearly confirm the tectonic landforms along the active fault zone, interpreted the aerial photographs of these sites, and measured their three-dimensional positions by GPS. The distance between each measured position and the active fault line is calculated as the error. The results show that the active fault lines obtained in this study have an average accuracy of several meters. The positional accuracy of these active fault lines is higher than that of any existing active fault chart, and it became possible to analyze with another highly accurate spatial data.

(Notes)

Research Group for ISTL Tectonic Landforms: Suzuki, Y., M. Watanabe, H. Sawa, D. Hirouchi, T. Kumamoto, N. Matsuta, M. Tajikara, K. Taniguchi, N. Sugito, S. Ishiguro, Y. Sato, Y. Nakamura, C. Uchida, S. Sano, T. Nozawa, and H. Sakaue

Keywords: tectonic landform, ISTL, active fault, WebGIS