

Extent of surface rupture along the Arima-Takatsuki fault zone during the 1596 Keicho-Fushimi earthquake

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The Arima-Takatsuki fault zone, located on the northwestern margin of the Kinki Triangle, is an active fault zone (ATFZ) developed along the geological boundary fault between Ryoke and Tanba belts. The ATFZ is composed of several active faults, and the most part of them are right-lateral faults. The detailed location and past seismic event of ATFZ have reported by previous study. They also reported that a part of ATFZ have moved at 1596 Keicho-Fushimi earthquake. But segmentation model of the ATFZ based on its map-view geometry and distribution of slip rates and moved area of 1596 Keicho-Fushimi earthquake are not investigated. In this study, we have carried out detailed geomorphological survey and measurement of topographic profiles based on precise aerial photograph interpretation along the ATFZ. Below are the main results obtained by this study.

Dextral slip rate of ATFZ is 0.5 to 1.7 mm/yr. Uplift rates of ATFZ is 0.02 to 0.24 mm/yr. The amounts of coseismic right-lateral displacement along the Kiyoshikojin and Makami fault are estimated to be 3m, on the basis of offsets of Jori, which is Japanese fields system started Taikanokaishin A.D 645, reconstructed after A.D 1200. Based on morphology of terminations of strike-slip faults, ATFZ can be divided into six segments; Rokko, Kiyoshikojin, Satsukioka, Bojima, Makami, Takatsuki-Tennouzan. The offset of Jori formed after A.D 1200 are interpreted as surface ruptures formed during the 1596 Keicho-Fushimi earthquakes. The offset of Jori are identified on the Kiyoshikojin, Bojima and Makami segment, suggesting that surface rupture of 1596 Keicho-Fushimi earthquake expensed for three segments. Summed slip rate for ATFZ and active fault Rokko southeastern flanks of the Rokko mountains (RAFZ) seem almost uniform, which suggests that slip-partitioning has occurred and, that Tanba and Rokko terrains have moved in E-W direction along the ATFZ and RAFZ.