

## Identification of Fault Displacement and Stratigraphic Correlation of Black Soils based on Radiocarbon Ages

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In order to clarify the stratigraphic correlation around the fault and the timing of faulting event, we carried out radiocarbon dating of the black soil sampled from the trench wall of the Atera Fault. Black soils were sampled at an interval of 3-6 cm along the vertical direction on both the hanging wall and footwall located approximately 50 cm away from the fault plane. Sample preparation and radiocarbon dating were carried out in the JAEA-AMS-TONO of Tono Geoscience Center, JAEA. Calendar years were obtained by calibrating <sup>14</sup>C age using OxCal 4.2.3 (Bronk Ramsey, 2013) with IntCal13 atmospheric curve (Reimer et al., 2013).

The dating results show that the soil ages vary from 4,000 to 2,000 years with depth of the sampling points. Black soil was deposited at approximately constant rate each at both sides of the fault in 4,000-2,000 years ago. This indicates that the fault didn't move during this period. In the upper part, there is no variation in ages of black soils including the gravel with depth. This suggests that sedimentation rate was faster. One of the causes that the sedimentation rate around the fault suddenly changes is fault displacement. It is thought that this fault move in about 2,000 years ago. About this timing, it is necessary to consider in behavioral segments of the Atera Fault zone in detail.

In addition, we are going to present results of the volcanic ashes analysis and radiocarbon ages of the lower part.

Keywords: radiocarbon dating, C-14 age, black soil, Atera fault, timing of faulting event