

Profiles of magnetic susceptibility and resistivity along an "outcrop" of the Atera fault

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In this study, we apply portable physical property sensors to geological surveys at outcrops, and investigate how much geological information can be increased by performing high-density in-situ measurements. The Atera Fault in Nakatsugawa City, Gifu Prefecture, was selected as the study area. The Atera Fault is a large active fault, and the local variation of physical properties are expected along the fault core due to rock fracturing caused by fault movement. At the fault outcrop (Kawakami outcrop) in Nakatsugawa city, a two-meter survey profile was placed on the cliff, and in-situ measurements of magnetic susceptibility and resistivity were performed at intervals of 5 cm. As a result, we found 1) the magnetic susceptibility increasing at the fault core, and 2) the resistivity decreasing around the fault core. These features are considered to be involved in rock fracture and mineral formation associated with fault movement. Such fine features were not observable with eyes, demonstrating the usefulness of on-site physical property measurement.