Stratigraphy, facies change, and origin of the Fuji-Sagamigawa mudflow deposits, central Japan

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The prominent lahar deposit named Fuji-Sagamigawa mudflow deposit is distributed along the Sagami River, in the southern Kanto area, central Japan. Similar lahar deposits are also found on the western and eastern flank of Fuji Volcano. We investigated the distribution, stratigraphy and facies of the Fuji-Sagamigawa mudflow deposit, and examined about the origin of this deposit. The Fuji-Sagamigawa mudflow deposit was considered to be formed during a single event, but it subdivided into three formations of FS 1, 2, 3 based on the existence of volcanic ash soils and clay layers between the deposits. In the upstream area, the sorting of the lahar deposits are very poor. The deposits contain large lava fragments and abundant fine-grained material. The thickness of the deposits exceeds 10 m in the area, and the deposits form flat depositional surfaces. The thickness and grain size are decreased toward the down stream. In the area 50 km downstream, the deposits become thin sandy deposits. The radiocarbon ages of 14 to 18 ka were obtained for the lahar deposits. And the lahar deposits found just above the terrace deposits, which formed during MIS 2. Since the ages of the deposits are concentrated on the Last Glacial Maximum, the origin of the lahar deposits are assumed to be related to the glacier, which formed on the summit of Fuji Volcano. The distribution and long-range of the deposits suggest that the lahars were formed around the summit. There is a high possibility that the summit of the Fuji Volcano was higher than the snowline during MIS 2. The pipe structures in the lahar deposits and scoria fall deposit accompanied by FS 2 suggest that the origin of the lahars were related to volcanic eruptions. Therefore, the lahars were supposed to be formed by subglacial eruption.