

## Appearance of a new fumarole in November 2008 and related mud deposits in Azuma volcano

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A new fumarole appeared at the northwestern rim of Oana crater of Azuma volcano on 11 November, 2008. We conducted fumarolic gas measurements on 13-14 and 26 November. Further, new mud deposits including lithic fragments were found around the new fumarolic crater. Here we report the results of the gas measurements and characteristics of the mud deposits revealed by the field investigations.

The fumarolic plume was rising up to about a few hundred meters above the new crater. A diameter of the crater is about 11 m on the 13th. According to JMA reports, the crater is enlarged as compared to just after the appearance of the fumarole on the 11th. The gas contents of the fumarole were measured by the Multi-GAS system on the 14th and 26th. The fumarolic gases contain high concentration (2.3-3.0 %) of SO<sub>2</sub>. An apparent equilibrium temperature rose from 339 degreeC on the 14th to 475 degreeC on the 26th as associating with an increase in H<sub>2</sub> content. Further, 200-350 ton/day of SO<sub>2</sub> flux was measured by the DOAS on the 26th. These results indicate substantial amounts of magmatic gases are released.

New mud deposits containing lithic fragments were found around the new crater. A flow deposit rests on an inner slope, with an inclination of more than 30 degrees, of Oana crater. The flow reaches 55-60 m from the crater and levees are formed at its margin. The volume of the flow deposit is about 100 m<sup>3</sup> if we estimate the area and average thickness as 500 m<sup>2</sup> and 20 cm, respectively. Fall deposits cover the wall of Oana crater rim and the surroundings. We could not fix the border of its extent, but it reaches at least 200 m to the west of the new crater.