Thermal analysis of active areas on the lava dome at Unzen using Landsat TM data

Takayuki Kaneko [1], Martin Wooster [2]

[1] Volc. Res. C., ERI, Univ. Tokyo, [2] Dept. Geog.,King's Col. London, Univ. London

We analysed high temperature areas - fumarolic areas, active lava lobes, depositional areas of collapsed materials etc.- on/around the Unzen 1991-1995 lava dome with the dual band method using nighttime SWIR data of Landsat TM. Systematic differences were observed between fumarolic and active lava lobe areas in temperature and size of the heat sources. The former shows higher temperature (500-600 deg.C) and smaller fraction, while the latter shows lower temperature (300-400 deg.C) and larger fraction. Such differences would be useful for discrimination of the type of high temperature areas on a lava dome at remote volcanoes.