

Automated scanning instrument for continuous volcanic gas flux monitoring by compact UV spectrometer

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Measurement of gas flux from volcanoes provides valuable information on amount and condition of magma system beneath the volcano. A UV correlation spectrometer (COSPEC) had been used for volcanic gas flux measurements since 1970s. After 2000, a new type of instrument using a compact UV spectrometer was introduced for monitoring the SO₂ flux. By sporadic monitoring of SO₂ flux (e.g. once every few weeks), we can only know whether the flux is increased or decreased. Moreover, we may miss the chance to detect very valuable signal from volcanoes. In contrast, continuous flux measurement can reveal not only mere increase or decrease of the flux but also how the flux increased or decreased. Considering these, it is important to develop and carry out continuous volcanic gas flux monitoring. In abroad, continuous flux monitoring is already on the move at several volcanoes by using automated scanning system for compact UV spectrometers. In Japan, it is also necessary to develop the automated scanning system and start continuous monitoring. In this study, I am going to present automated scanning instrument that has been currently being developed and show some results obtained by the new instrument.