An optical sensor was developed to measure CO\textsubscript{2} and HF in volcanic plumes. The volcanic analyzer is a portable experimental platform for in-situ real-time simultaneous absolute concentration measurements of 5 volcanic gases: CO\textsubscript{2}, HF, CO, H\textsubscript{2}O, and HCl. INERIS is a French institute for different combustions (natural, diesel, and biomass) in order to validate the optical techniques for in-line concentration measurements.

**EXECUTION**: 3 DFB fiber lasers: 1278 nm for HF, 1742 nm for HCl, 2044 nm for CO\textsubscript{2} (Nanoplus)
- RED PIXTA (125 MSAs @ 14 bl)

**UV CHANNEL**
- UV led + Ocean Optics spectrometer
- RASPBERRY (800 MHz)

**MULTIPASS CELL**
- path 1.63 m (version 1)
- path 2.0 m (version 2)

**WEIGHT**
- 3 kg (version 1)
- 3.3 kg (version 2)

**THE PLATFORM**
- 65 x 40 x 25 cm
- 23 kg

- Tunable diode lasers
- NDIR spectrometer for CO\textsubscript{2} and H\textsubscript{2}O
- NDIR/MIR spectrometer for HCl
- UV spectrometer for SO\textsubscript{2}

**IN-FLIGHT MEASUREMENTS**
- UV Spectrometer for CO\textsubscript{2} and H\textsubscript{2}O
- + UV signal with SO\textsubscript{2} absorption

**SOURCES:** Quasi-Lorentzian spectra

**DRONE ANALYZER**
- 3 DFB fiber lasers: 1278 nm for HF, 1742 nm for HCl, 2044 nm for CO\textsubscript{2} (Nanoplus)
- RED PIXTA (125 MSAs @ 14 bl)
- UV CHANNEL
- UV led + Ocean Optics spectrometer for SO\textsubscript{2}
- Raspberry (800 MHz)
- MULTIPASS CELL
  - path 1.63 m (version 1)
  - path 2.0 m (version 2)
- WEIGHT
  - 3 kg (version 1)
  - 3.3 kg (version 2)