

Supplement of SOIL, 5, 49–62, 2019
<https://doi.org/10.5194/soil-5-49-2019-supplement>
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Supplement of

Application of a laser-based spectrometer for continuous in situ measurements of stable isotopes of soil CO₂ in calcareous and acidic soils

Jobin Joseph et al.

Correspondence to: Jobin Joseph (jobin.joseph@wsl.ch)

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Figure S1

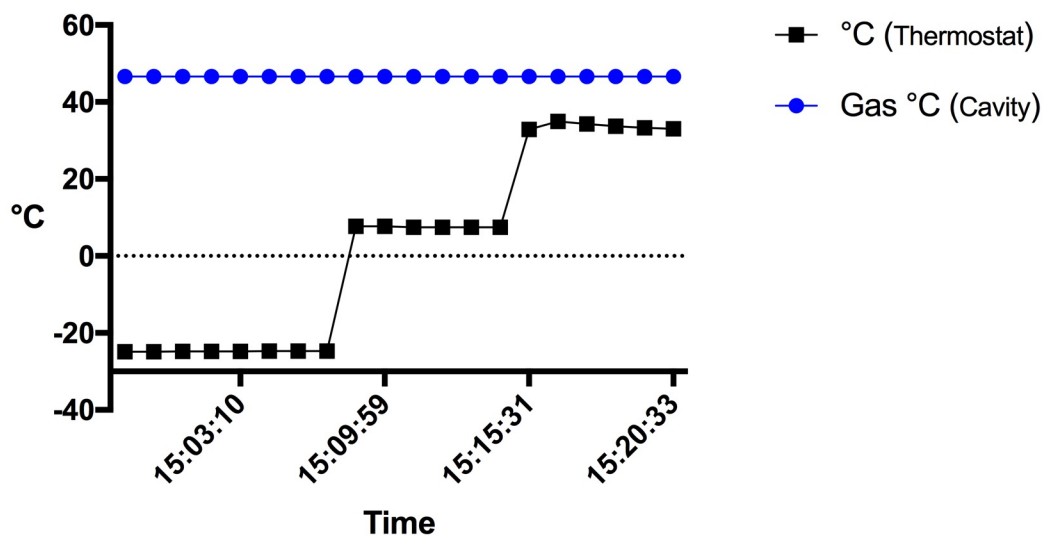


Figure S1: Temperature sensitivity of OA-ICOS. Influence of temperature fluctuations in thermostat unit (black square) on gas temperature inside the optical cavity (Blue circles).

Figure S2

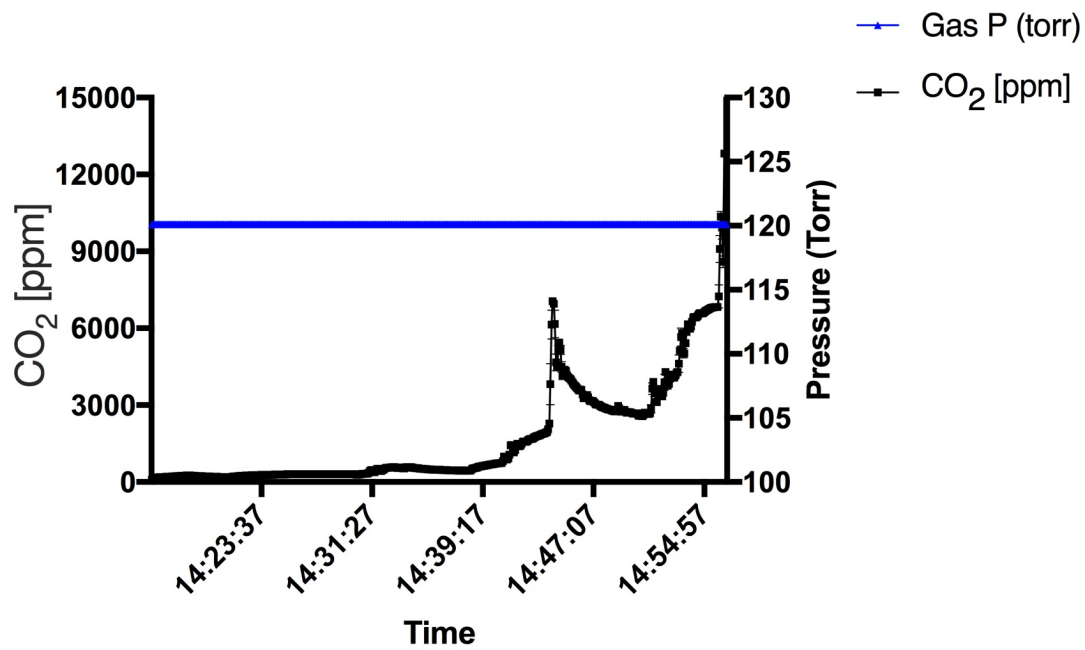


Figure S2: Optical cavity pressure data (blue line) of an OA-ICOS maintained in a closed loop of gas supply.

Figure S3

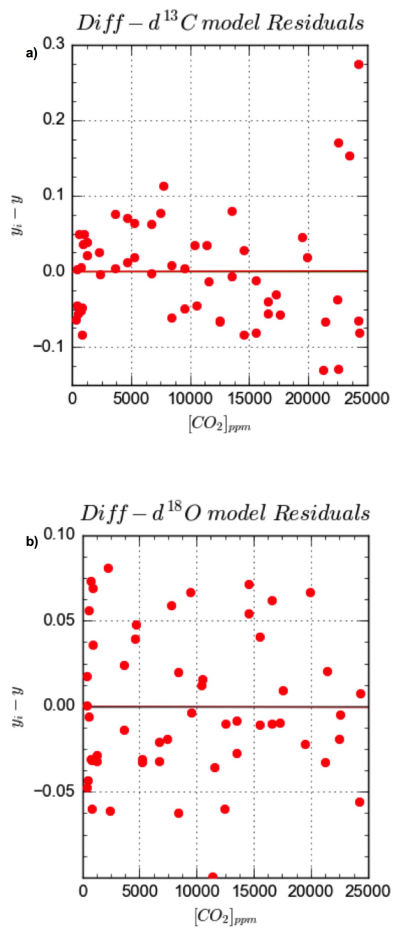


Figure S3: Residual distribution of modelled data for (a) Diff- $\delta^{13}\text{C}$ and (b) Diff- $\delta^{18}\text{O}$ values across changing CO₂ concentration (300 – 25000 ppm).

Figure S4

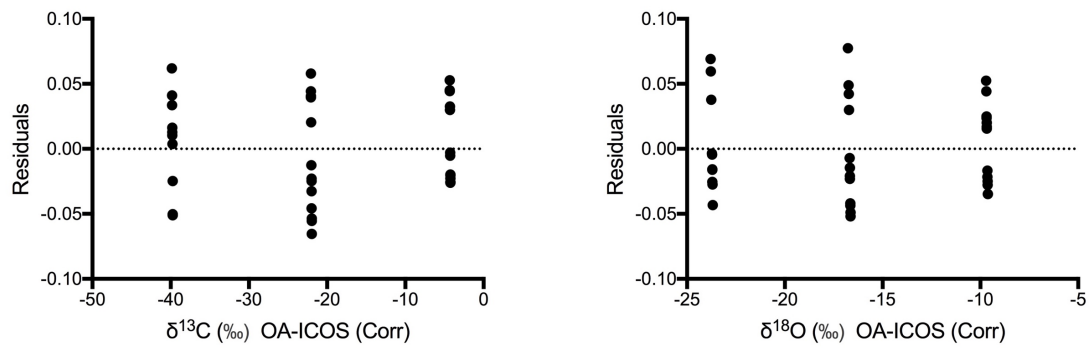


Figure S4: Residuals: Linear regression of Three-point calibration of (a) $\delta^{13}\text{C}$ (‰) OA-ICOS (Corr) and (b) $\delta^{18}\text{O}$ (‰) OA-ICOS (Corr).

Table S1 The $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ values of the calibration standards used measured against VPDB.

CO ₂ standard	$\delta^{13}\text{C}$	$\delta^{18}\text{O}$
Heavy standard	$-4.28 \pm 0.03\text{‰}$	$-9.66 \pm 0.06\text{‰}$
Validation standard	$-22.02 \pm 0.04\text{‰}$	$-16.63 \pm 0.035\text{‰}$
Light standard	$-39.76 \pm 0.04\text{‰}$	$-23.74 \pm 0.035\text{‰}$