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*Supplement of*

# Technical note: Skirt chamber – an open dynamic method for the rapid and minimally intrusive measurement of greenhouse gas emissions from peatlands

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**Supporting Information**

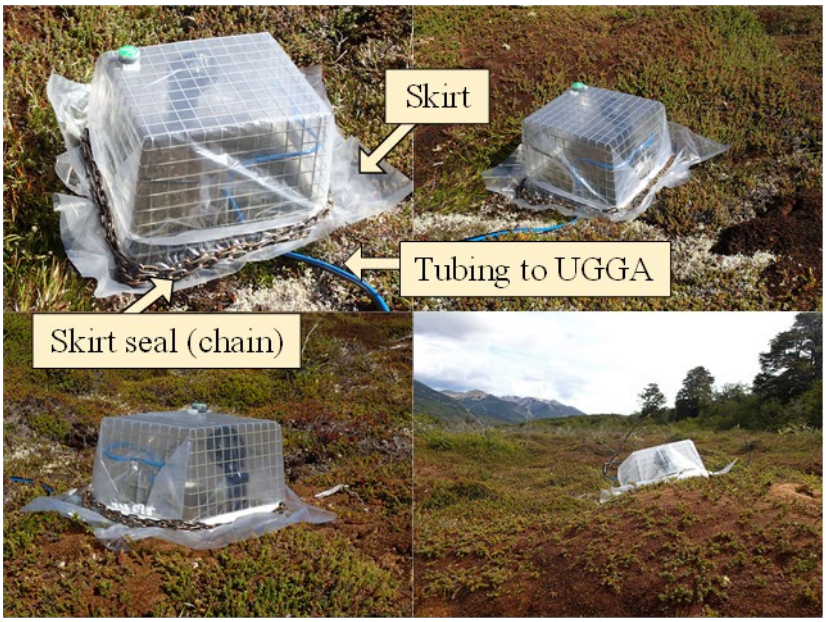


**Figure S1**: Photographs of the skirt-chamber under different configurations.

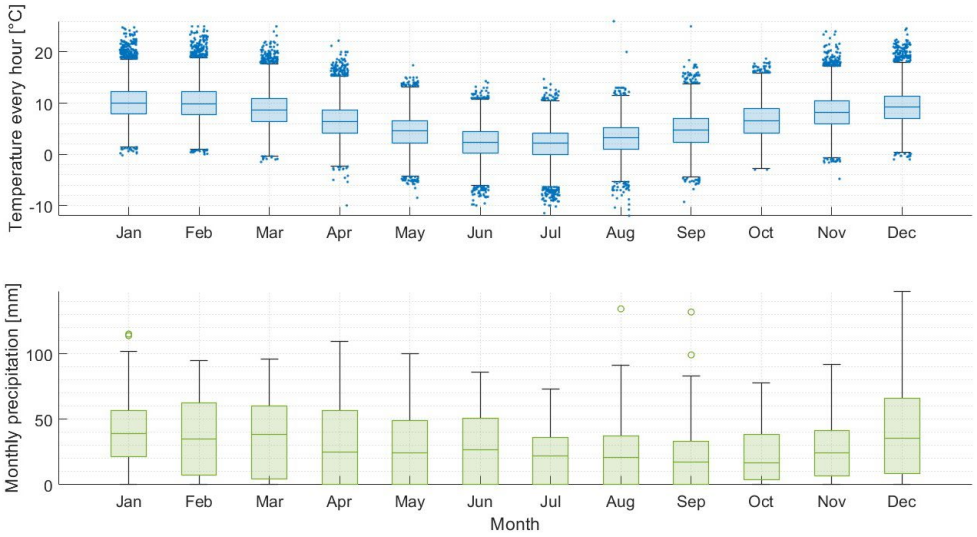


**Figure S2**: Puerto Williams climatogram at the Guardiamarina Zañartu airport, located 1800 m northeast of the studied peatlands (DGAC, 2023).

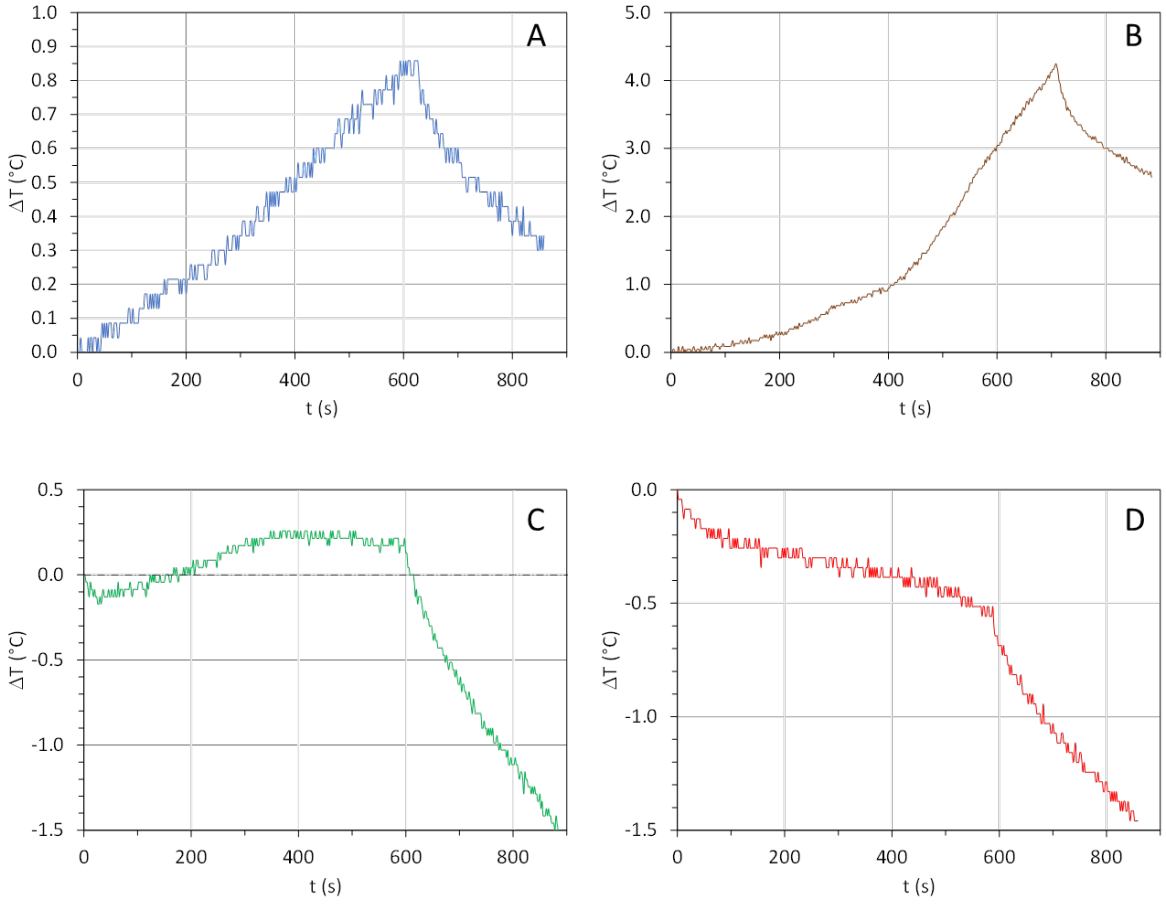


**Figure S3**: Examples of temperature behavior observed within the chamber during its deployment. The observed decrease at t > 600 s corresponds to Step 4 (dark screen deployment).

**Table S1**: $R_{CO2}$ measured at 16 locations divided in four transects, on three occasions, i.e. at t = 0, 2 and 12 days. *: hotspots.

| | | t (d) | | | |
|---|---|---|---|---|---|
| # | Transect | 0 | 2 | 12 | CV |
| 1 | 1 | 235 ± 19 | 103 ± 40 | 174 ± 40 | 39% |
| 2 | 1 | 97 ± 51 | 135 ± 398 | 97 ± 83 | 20% |
| 3 | 1 | 110 ± 26 | 214 ± 65 | 172 ± 46 | 32% |
| 4 | 1 | 184 ± 12 | 205 ± 99 | 157 ± 55 | 13% |
| 5 | 2 | 511 ± 103 | 390 ± 174* | 559 ± 150* | 18% |
| 6 | 2 | 688 ± 125* | 271 ± 231 | 434 ± 127 | 45% |
| 7 | 2 | 178 ± 54 | 382 ± 232* | 373 ± 205 | 37% |
| 8 | 2 | 187 ± 61 | 133 ± 45 | 134 ± 44 | 20% |
| 9 | 3 | 692 ± 53* | 286 ± 342 | 661 ± 177* | 41% |
| 10 | 3 | 356 ± 42 | 179 ± 37 | 188 ± 31 | 41% |
| 11 | 3 | 709 ± 70* | 378 ± 120 | 711 ± 103* | 32% |
| 12 | 3 | 358 ± 21 | 561 ± 147* | 337 ± 50 | 30% |
| 13 | 4 | 270 ± 16 | 31 ± 27 | 132 ± 28 | 83% |
| 14 | 4 | 549 ± 26 | 203 ± 44 | 343 ± 25 | 48% |
| 15 | 4 | 215 ± 24 | 230 ± 61 | 267 ± 58 | 11% |
| 16 | 4 | 249 ± 31 | 380 ± 30 | 266 ± 24 | 24% |
| | Mean | 350 ± 213 | 256 ± 136 | 313 ± 192 | |
| | CV | 61% | 53% | 61% | |

**Table S2**: Percentage of chamber area covered by the major plant and lichen species and by exposed peat surface, at 16 locations divided into four transects (same locations as Tables 2 and S1). **Sm**, *Sphagnum magellanicum*; **E**, *Ericaceae* species (*Empetrum rubrum* and/or *Gaultheria pumila*); **Tm**, *Tetroncium magellanicum*; **Na**, shrubby *Nothofagus antarctica*; **P**, *Polytrichum spp*.; **L**, Lichens (*Cladonia arbuscula* and/or *Coelopogon epiphorellus*); **Pt**, exposed peat.

| # | Transect | **Sm** | **E** | **Tm** | **Na** | **P** | **L** | **Pt** |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 62.3 | 37.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2 | 1 | 0.0 | 91 | 0.0 | 0.0 | 0.0 | 0.9 | 0.0 |
| 3 | 1 | 0.0 | 1.9 | 1.5 | 0.0 | 8.3 | 17.8 | 70.6 |
| 4 | 1 | 0.0 | 79.3 | 0.0 | 0.0 | 0.0 | 20.7 | 0.0 |
| 5 | 2 | 0.0 | 85.9 | 9.9 | 0.0 | 0.0 | 4.2 | 0.0 |
| 6 | 2 | 0.0 | 19.7 | 79 | 0.6 | 0.0 | 0.7 | 0.0 |
| 7 | 2 | 0.0 | 80.4 | 2.8 | 0.0 | 0.0 | 16.8 | 0.0 |
| 8 | 2 | 0.0 | 22.5 | 11.4 | 0.0 | 0.0 | 60.3 | 5.8 |
| 9 | 3 | 0.0 | 0.0 | 95.2 | 4.8 | 0.0 | 0.0 | 0.0 |
| 10 | 3 | 0.0 | 74.5 | 0.0 | 0.0 | 0.0 | 19.3 | 6.2 |
| 11 | 3 | 34.7 | 25.8 | 39.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| 12 | 3 | 0.0 | 66.2 | 4.1 | 0.0 | 0.8 | 28.9 | 0.0 |
| 13 | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 30 | 4.9 | 65.5 |
| 14 | 4 | 0.0 | 57.9 | 0.3 | 0.0 | 0.0 | 40.1 | 1.7 |
| 15 | 4 | 85.8 | 15.4 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 |
| 16 | 4 | 0.0 | 89.7 | 1.5 | 0.0 | 0.0 | 8.9 | 0.0 |

## References

DGAC: Temperature and precipitation data from 1961-2022 data, Dirección General De Aeronáutica Civil Dirección Meteorológica de Chile, Servicios Climáticos, https://climatologia.meteochile.gob.cl/