Supplement of Atmos. Meas. Tech., 15, 5019–5031, 2022
https://doi.org/10.5194/amt-15-5019-2022-supplement

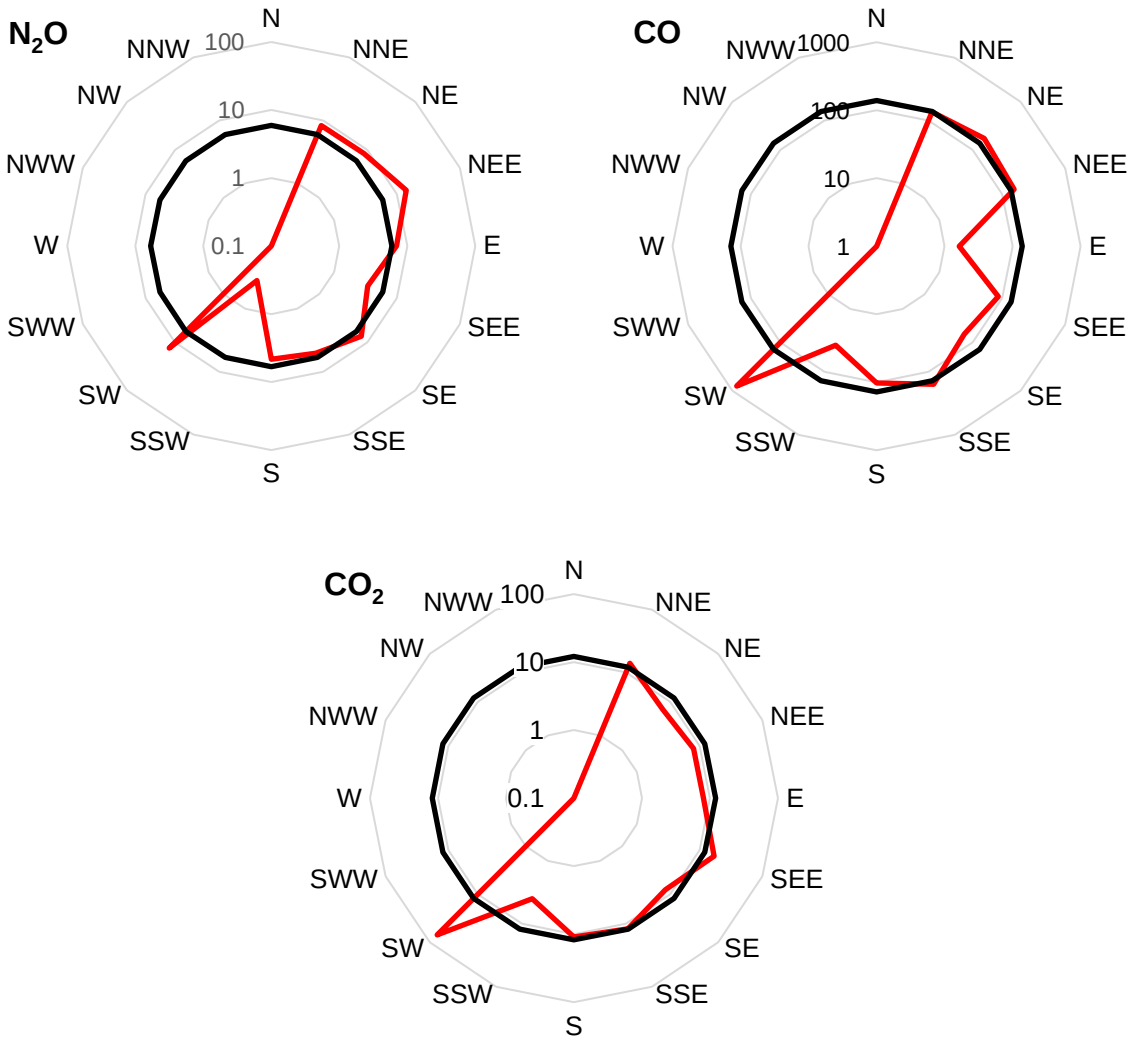
Atmospheric Measurement Techniques
Open Access
EGU

Supplement of

Real-world wintertime CO, N_2O, and CO_2 emissions of a central European village

László Haszpra et al.

Correspondence to: László Haszpra (haszpra.l@gmail.com)



N	NNE	NE	NEE	E	SEE	SE	SSE	S	SSW	SW	SWW	W	NWW	NW	NNW
0	54	91	48	30	36	142	530	70	60	49	6	2	0	0	2

Figure S1: Sectorial distribution of the median fluxes of N_2O (ng m^{-2} s^{-1}), CO (ng m^{-2} s^{-1}), and CO_2 (µg m^{-2} s^{-1}) of the „natural" landscape (red), the median flux calculated using all available data (black), and the available data per sector. No median is calculated for n<10. Logarithmic scale is applied for the better visualization. The village is located in the SW-W-NW-N sector (see Fig. 3 in the main text of the paper).

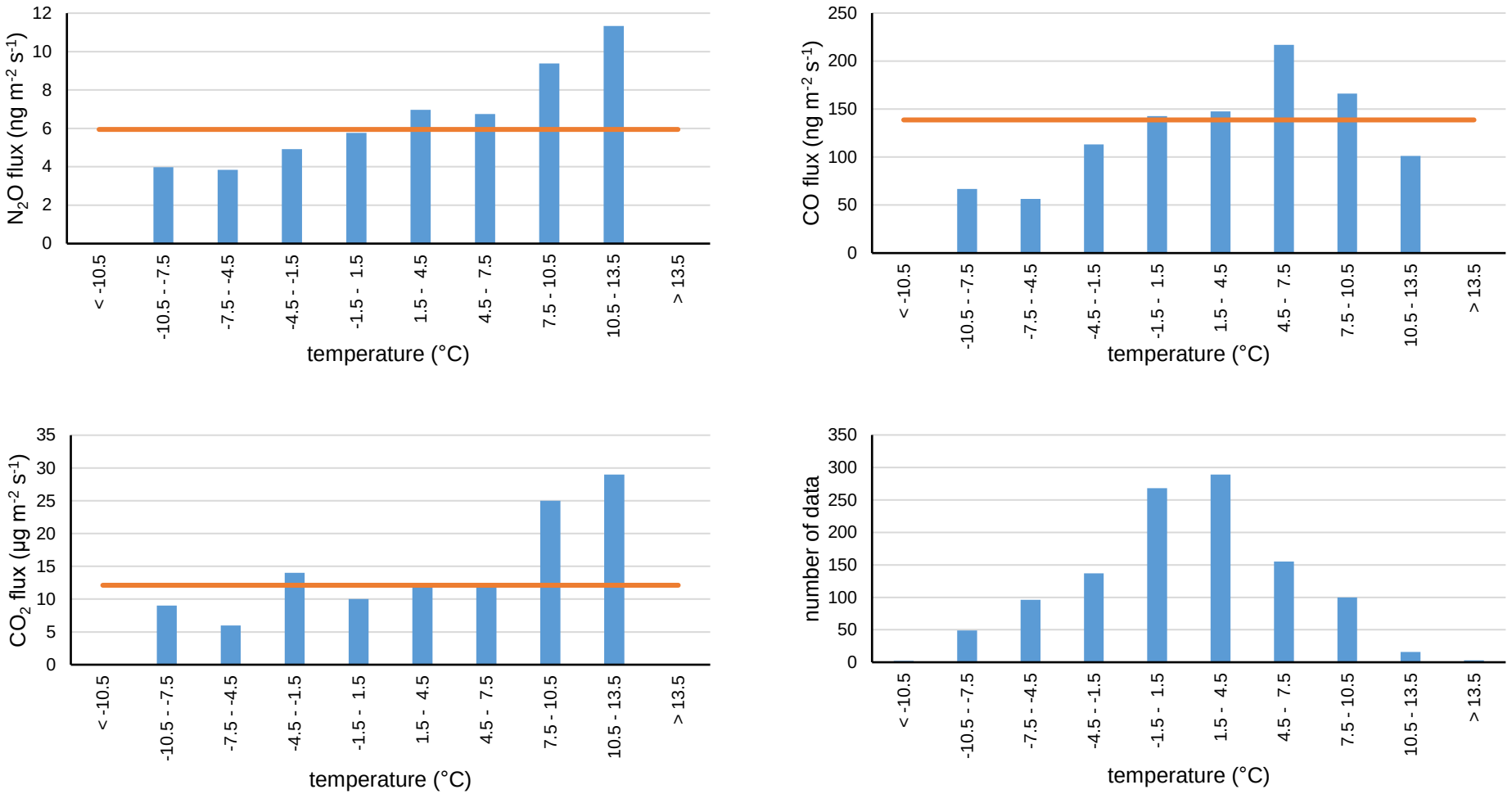


Figure S2: Temperature dependences of the median emission density of the „natural" landscape, the medians of all available data (orange lines), and the number of data in each temperature range. No median is calculated for n<10.

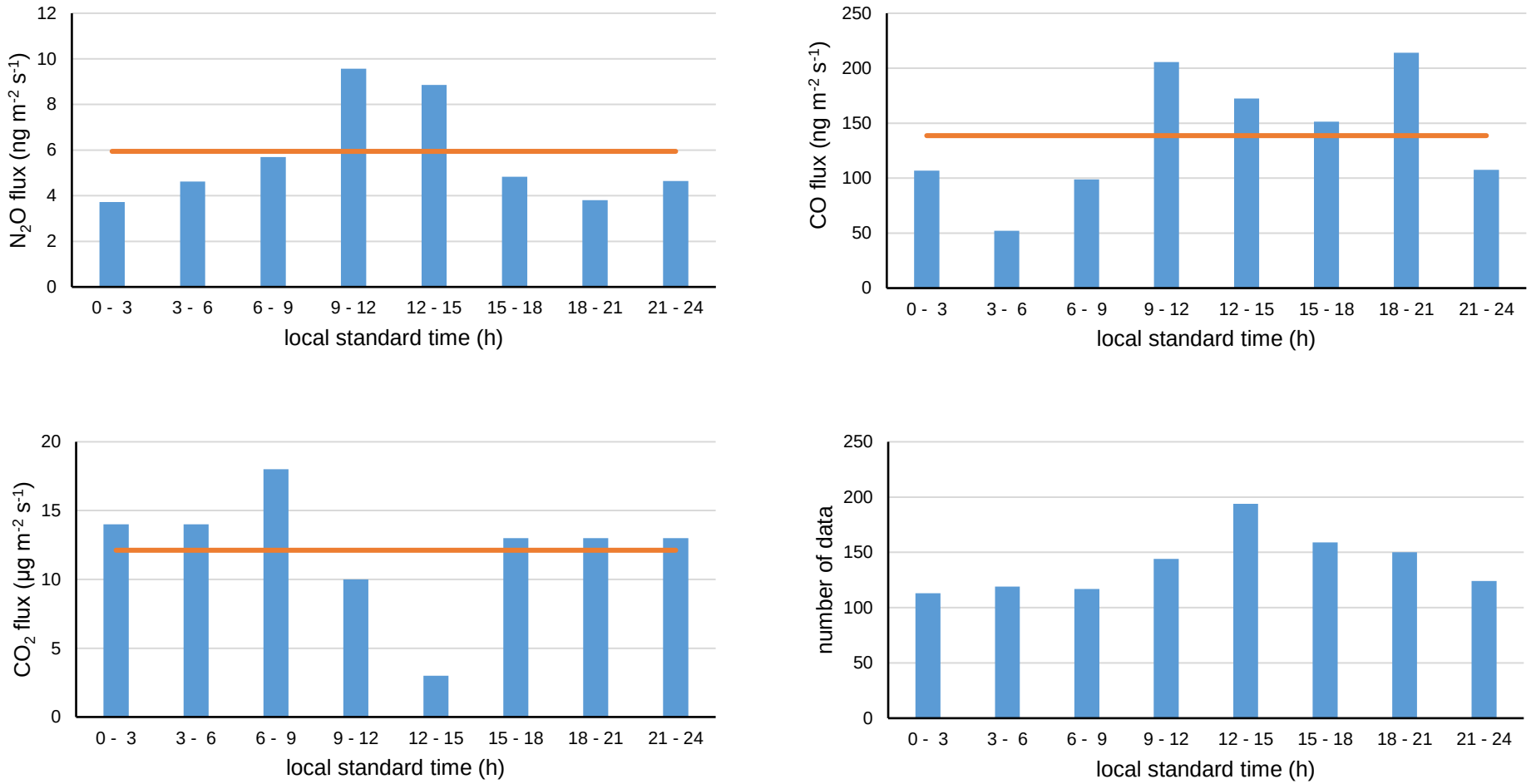


Figure S3: Diurnal variations of the median emission density of the „natural" landscape, the medians of all available data (orange lines), and the number of data in each time range.

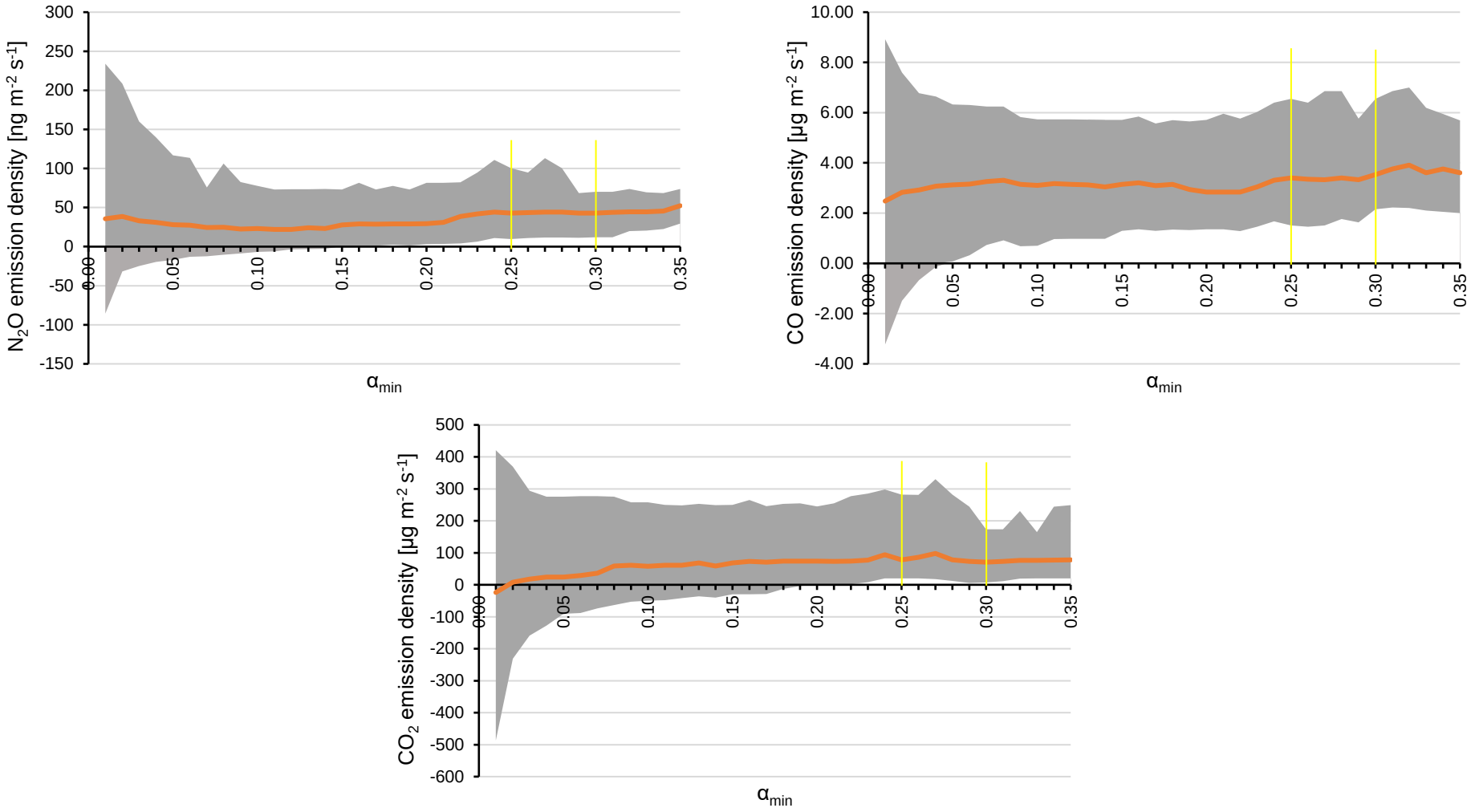


Figure S4: Convergences of the median emission densities (orange lines) and interquartile ranges (grey bands) as the function of the minimum footprint coverage of the village (α_{min}). The vertical yellow lines indicate the values presented in Table 1 in the main text of the paper ($\alpha \geq 0.25$ and $\alpha \geq 0.30$). The number of data available for the calculations is shown in Fig. 5 in the main text.

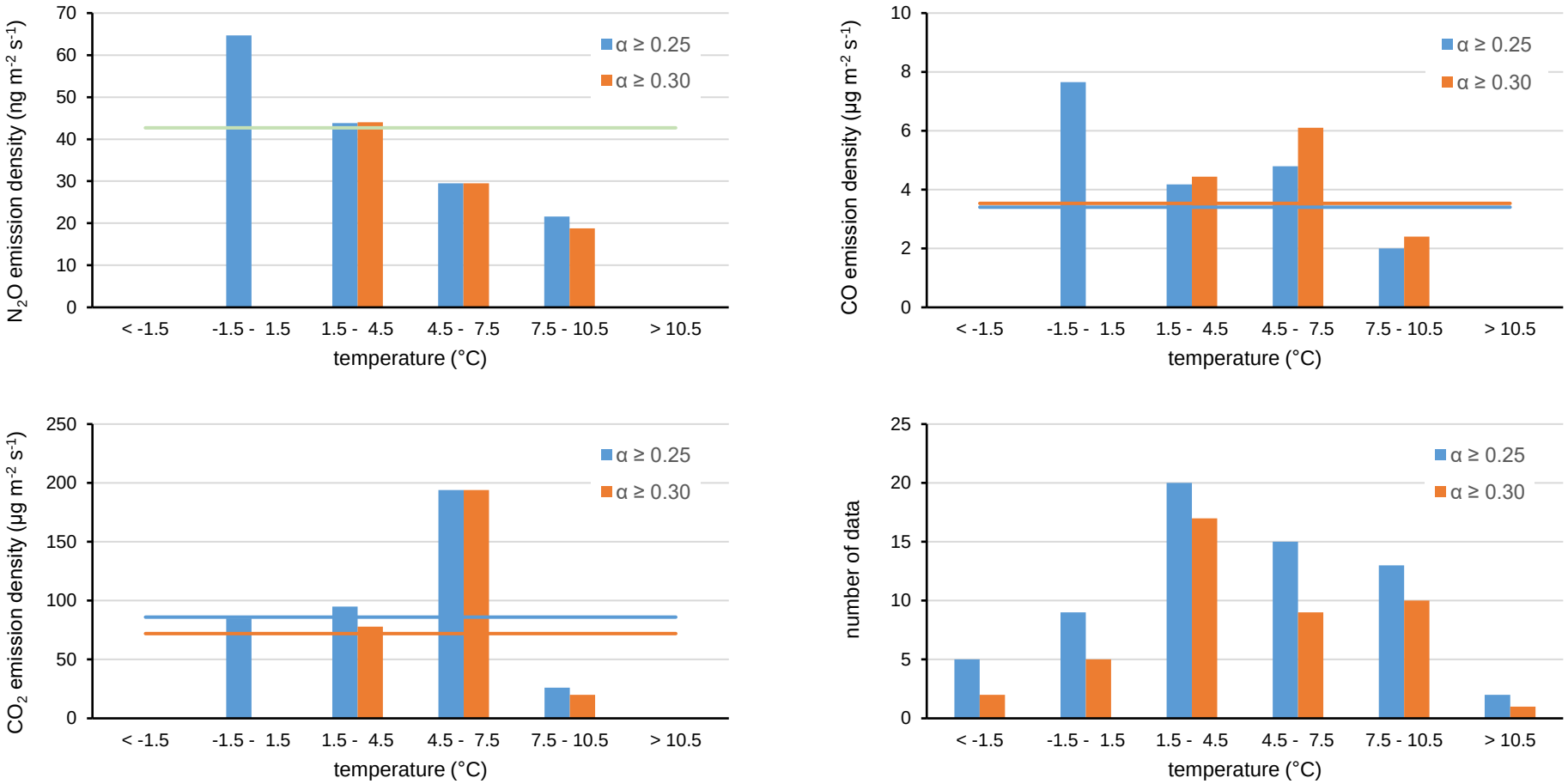


Figure S5: Temperature dependences of the median emission densities in the village for $\alpha \geq 0.25$ and $\alpha \geq 0.30$, the medians of all available data (blue and orange lines), and the number of data in each temperature range. No median is calculated for $n < 9$. Note: in the case of N_2O the medians of all available data for $\alpha \geq 0.25$ and $\alpha \geq 0.30$ are equal (green line).

Table S1: Median of $F_{natural}$ as the function of temperature and time-of-day. No median is calculated if the number of data points is less than 10

CO (μg m^{-2} s^{-1})

local standard time (h)	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24
temperature range (°C)								
-10.5 - -7.5	—	—	—	—	—	—	—	—
-7.5 - -4.5	0.04	0.05	0.06	—	0.18	—	0.02	0.09
-4.5 - -1.5	0.11	0.01	0.01	0.11	0.37	0.16	0.15	0.06
-1.5 - 1.5	0.02	0.04	0.16	0.20	0.14	0.21	0.22	0.19
1.5 - 4.5	0.14	0.04	0.11	0.27	0.10	0.21	0.21	0.09
4.5 - 7.5	0.18	0.09	0.26	0.12	0.30	0.31	0.27	0.05
7.5 - 10.5	—	—	—	0.30	0.20	0.08	0.30	—
10.5 - 13.5	—	—	—	—	—	—	—	—

N_2O (ng m^{-2} s^{-1})

local standard time (h)	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24
temperature range (°C)								
-10.5 - -7.5	—	—	—	—	—	—	—	—
-7.5 - -4.5	1.51	3.57	1.95	—	4.59	—	6.18	2.3
-4.5 - -1.5	12.09	1.45	3.61	4.65	6.53	6.55	1.61	1.78
-1.5 - 1.5	2.9	4.89	5.69	11.46	4.66	5.04	3.09	4.64
1.5 - 4.5	5.72	4.34	9.69	9.57	9.46	8.3	4.46	5.69
4.5 - 7.5	3.2	3.64	12.07	11.14	12.4	3.87	4.25	2.78
7.5 - 10.5	—	—	—	14.42	10.37	2.82	4.86	—
10.5 - 13.5	—	—	—	—	—	—	—	—

CO_2 (μg m^{-2} s^{-1})

local standard time (h)	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24
temperature range (°C)								
-10.5 - -7.5	—	—	—	—	—	—	—	—
-7.5 - -4.5	5.3	7.8	3.1	—	23.6	—	6.8	3.4
-4.5 - -1.5	1.7	7.4	9.2	13.6	20.0	18.9	15.4	18.0
-1.5 - 1.5	1.3	10.1	29.9	8.5	2.4	8.1	7.2	13.5
1.5 - 4.5	22.0	26.6	25.0	8.8	-4.2	15.7	12.6	12.7
4.5 - 7.5	29.9	55.5	80.6	2.6	-5.3	6.6	12.6	13.0
7.5 - 10.5	—	—	—	-12.0	2.1	16.7	62.2	—
10.5 - 13.5	—	—	—	—	—	—	—	—

Number of data points

local standard time (h)	0-3	3-6	6-9	9-12	12-15	15-18	18-21	21-24
temperature range (°C)								
-10.5 - -7.5	3	7	8	8	8	5	5	3
-7.5 - -4.5	18	13	13	7	15	5	11	12
-4.5 - -1.5	11	11	17	19	11	18	25	20
-1.5 - 1.5	25	32	39	41	41	37	26	22
1.5 - 4.5	34	30	24	40	46	37	41	44
4.5 - 7.5	15	19	12	15	30	25	28	14
7.5 - 10.5	7	6	1	10	33	26	13	8
10.5 - 13.5	0	1	2	3	5	4	0	1