

Supplementary Materials

Usefulness of UAV-Mounted Multi-Sensors System for In Situ Atmospheric Measurement: A Case Study from Wrocław, Poland [†]

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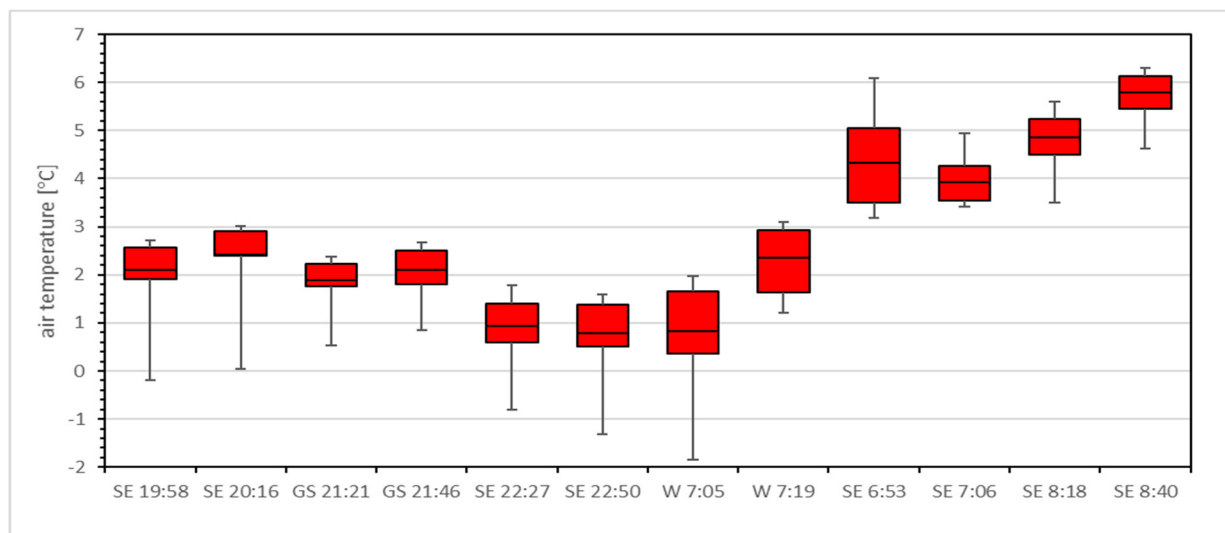
[†] Presented at the 5th International Electronic Conference on Atmospheric Sciences, 16–31 July 2022; Available online: <https://ecas2022.sciforum.net/>.

Table S1. The description of the measurement campaigns. All meteorological data are public available via <https://opendata.meteo.uni.wroc.pl/> (accessed on 1 June 2022).

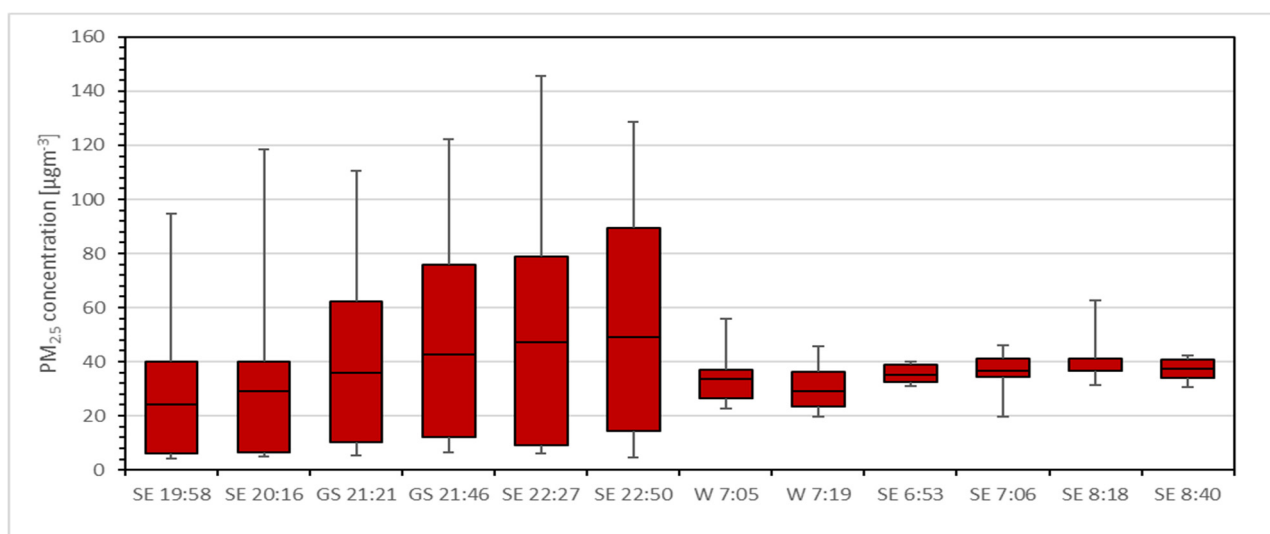
Date	Drone measurements				Stationary measurements at the Observatory of University of Wrocław					
	No of profile	Type of landuse	Start [UTC]	LON LAT	PM ₁₀ [µg m ⁻³]	PM _{2.5} [µg m ⁻³]	P [hPa]	T [°C]	RH [%]	V [ms ⁻¹]
06.10.2019	SE 19:10	suburban	19:10		42.3	40.5	1004.6	1.7	88.2	0.5
	SE 19:34		19:34	17.1014	50.4	49.0	1004.3	1.4	89.7	0.6
	SE 22:21		22:21	51.1103	27.6	27.7	1004.1	-0.8	95.2	0.4
	SE 22:37		22:37		27.9	28.2	1004.1	-1.1	94.8	0.5
	SE 19:58		19:58	17.1014	77.5	66.4	1015.6	-2.0	100.0	0.7
30.10.2019	SE 20:16	suburban	20:16	51.1103	80.2	75.5	1015.5	-2.3	99.7	0.5
	GS 21:19		21:19	17.0443	70.1	69.3	1015.2	-2.8	99.5	0.4
	GS 21:41		21:41	51.1252	81.4	74.8	1015.1	-3.0	100.0	0.4
	SE 22:27		22:27	17.1015	63.3	63.2	1014.8	-3.1	100.0	0.5
	SE 22:44		22:44	51.1103	47.9	49.8	1014.6	-2.9	100.0	0.3
12.12.2019	GS 19:20	urban	19:20		42.9	36.8	988.9	0.3	73.0	1.2
	GS 19:42		19:42		49.5	44.5	988.5	0.3	73.2	0.9
	GS 20:18		20:18	17.0443	46.6	42.4	988.0	0.1	74.2	0.9
	GS 20:38		20:38	51.1251	43.0	38.8	987.8	0.1	75.1	1.0
	GS 20:56		20:56		39.2	35.6	987.6	0.1	75.0	0.8
24.01.2020	GS 21:11	suburban	21:11		36.7	33.2	987.4	-0.2	75.5	1.0
	SE 9:39		09:39	17.1015	29.8	30.3	1008.7	1.1	67.6	2.0
	SE 9:52		09:52	51.1103	22.2	37.5	1008.6	1.6	64.4	1.8
	W 07:05		07:05	17.1195	39.3	27.9	1015.9	5.3	88.7	2.3
	W 07:19		07:19	51.1389	39.5	27.4	1015.9	5.3	88.2	2.2
10.11.2020	W 07:55	rural	07:55		38.5	28.0	1015.9	5.3	87.3	2.5
	W 08:18		08:18	horizontal	35.9	27.1	1015.9	5.3	86.8	2.4
	W 07:1		07:11	17.1195	32.6	18.8	1007.8	6.0	87.2	0.9
	W 07:27		07:27	51.1389	32.6	19.4	1007.8	6.4	87.0	1.1
	W 07:42		07:42	horizontal	32.0	19.1	1007.8	6.9	84.9	1.2
13.11.2020	W 08:15	suburban	08:15		33.3	20.0	1007.8	8.0	78.8	1.1
	SE 17:22		17:22	17.1014	34.2	28.8	1010.3	0.2	84.5	1.2
	SE 17:41		17:41	51.1103	31.6	27.4	1010.8	-0.1	83.8	0.6
	W 19:00		19:00	17.1195	36.1	31.3	1010.3	-1.0	86.7	1.3
	W 19:17		19:17	51.1389	32.3	28.3	1010.2	-1.0	87.3	1.5
24.11.2020	W 19:35	rural	19:35		27.3	26.5	1010.2	-1.1	87.2	0.6
	W 19:59		19:59	horizontal	30.6	30.7	1010.1	-1.5	86.6	0.4
	W 07:05		07:05	17.1195	30.4	18.6	1007.4	-4.5	86.8	0.5
	W 07:19		07:19	51.1389	31.4	18.3	1007.4	-4.1	87.4	0.6

17.12.2020	W 07:39	07:39	horizontal	38.2	21.1	1007.4	-3.6	87.8	0.7
	SE 06:53	06:53		18.9	13.5	1009.2	3.9	80.1	1.3
	SE 07:06	07:06	17.1014	17.3	12.6	1009.2	3.9	79.8	1.4
	SE 08:18	08:18	51.1103	17.0	11.0	1009.0	3.5	77.7	2.0
	SE 08:47	08:47		20.8	13.4	1009.0	3.8	75.6	1.4

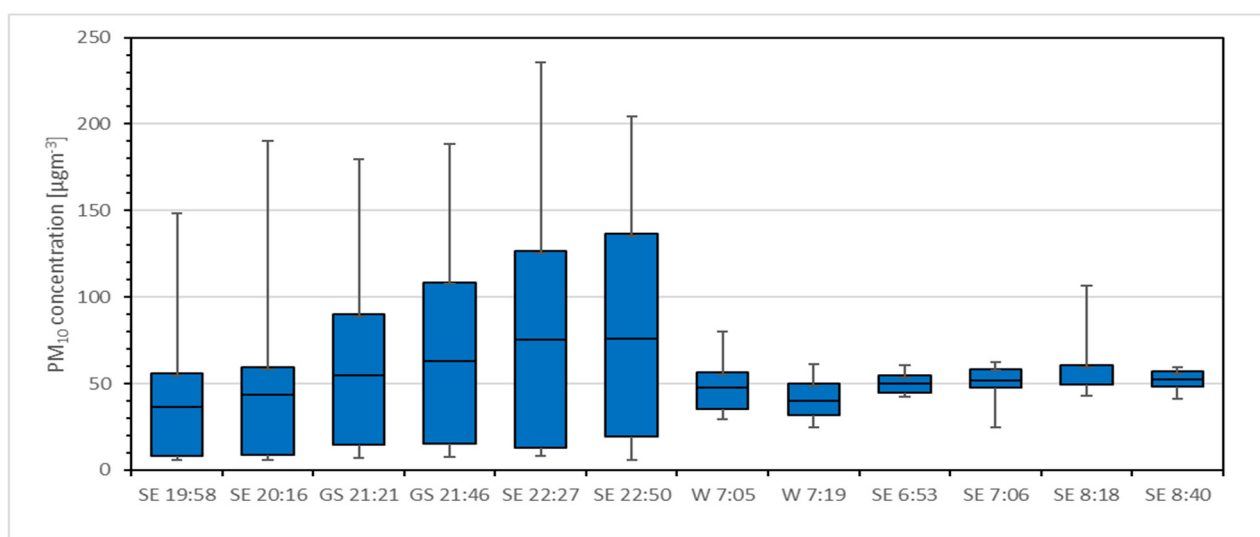
T – air temperature, P – atmospheric pressure, RH – relative humidity, V – wind speed.



(a)



(b)



(c)

Figure S1. Whisker plots describing general characteristics of temperature (a) and particulate matter PM_{2.5} (b) and PM₁₀ (c) from drone measurements during selected field researches.