Supplementary material

Table S1. Descriptive statistics of meteorological variables [temperature (t), wind speed (ws), wind direction (wd) and relative humidity (rh)] and GEM concentration recorded at the EMMA Station (Nahuel Huapi National Park, Northwestern Patagonia) are reported referring to both the whole data frame (October 23, 2012 - May 15, 2016), as well as to each of the four seasons (Summer, Autumn, Winter and Spring) .

Variable		Whole data frame (2012-2016)	Summer (DJF)	Autumn (MAM)	Winter (JJA)	Spring (SON)
	n	25700	7853	8537	4068	5242
t (°C)	Min	-9.6	-2.4	-4.6	-9.6	-5.8
	1st Q	4.1	8.3	4.7	-0.3	2.9
	Median	8.5	13.4	8.6	2.2	6.7
	Mean	9.6	14.49	9.012	2.25	7.851
	3rd Q	14.2	19.8	12.6	4.8	12.2
	Max	37.7	37.7	33.1	16.2	30
ws (m s^{-1})	Min	0	0	0	0	0
	1st Q	0	0	0	0	0
	Median	1.6	3.2	1.6	1.6	3.2
	Mean	3.568	4.342	3.018	2.502	4.13
	3rd Q	6.4	6.4	4.8	4.8	8
	Max	22.5	19.3	16.1	22.5	19.3
wd (°)	Direction	315°(NW)	292.5°(WNW)	315°(NW)	315°(NW)	315°(NW)
	Frequency	15387	5080	3546	3279	4254
	Direction	292.5° (WNW)	315°(NW)	292°(WNW)	292°(WNW)	292°(WNW)
	Frequency	13503	4308	3361	2353	2710
rh (%)	Min	12	14	12	27	19
	1st Q	52	46	58	61	47
	Median	64	59	72	69	58
	Mean	64.73	58.9	71.4	71.45	57.4
	3rd Q	78	71	89	84	67
	Max	100	98	100	100	99
GEM (ng m^{-3})	Min	0.23	0.31	0.23	0.39	0.42
	1st Q	0.77	0.76	0.71	0.85	0.84
	Median	0.87	0.86	0.80	0.93	0.93
	Mean (SD)	0.87 (0.15)	0.86 (0.15)	0.81 (0.15)	0.92 (0.10)	0.93 (0.13)
	3rd Q	0.97	0.96	0.92	1.00	1.01
	Max	1.42	1.42	1.16	1.17	1.31

Table S2. Results of the Principal Component Analysis (PCA) performed to study the relationship between meteorological variables and GEM concentrations trends recorded at the EMMA Station (Nahuel Huapi National Park, Northwestern Patagonia). The values reported in the table are the contributions of the variables (based on correlations) to the main factors/components (Factors 1, 2, 3, Variance explained >15%).

Variable	Factor 1	Factor 2	Factor 3
temperature	0.805	-0.381	-0.13
Wind speed	0.813	0.206	-0.135
Relative humidity	-0.814	0.33	0.029
Wind direction	0.267	0.821	-0.434
GEM	0.453	0.415	0.783
Variance explained (%)	44.97	22.85	16.73
Cummulative Variance explained (%)	44.97	67.82	84.56
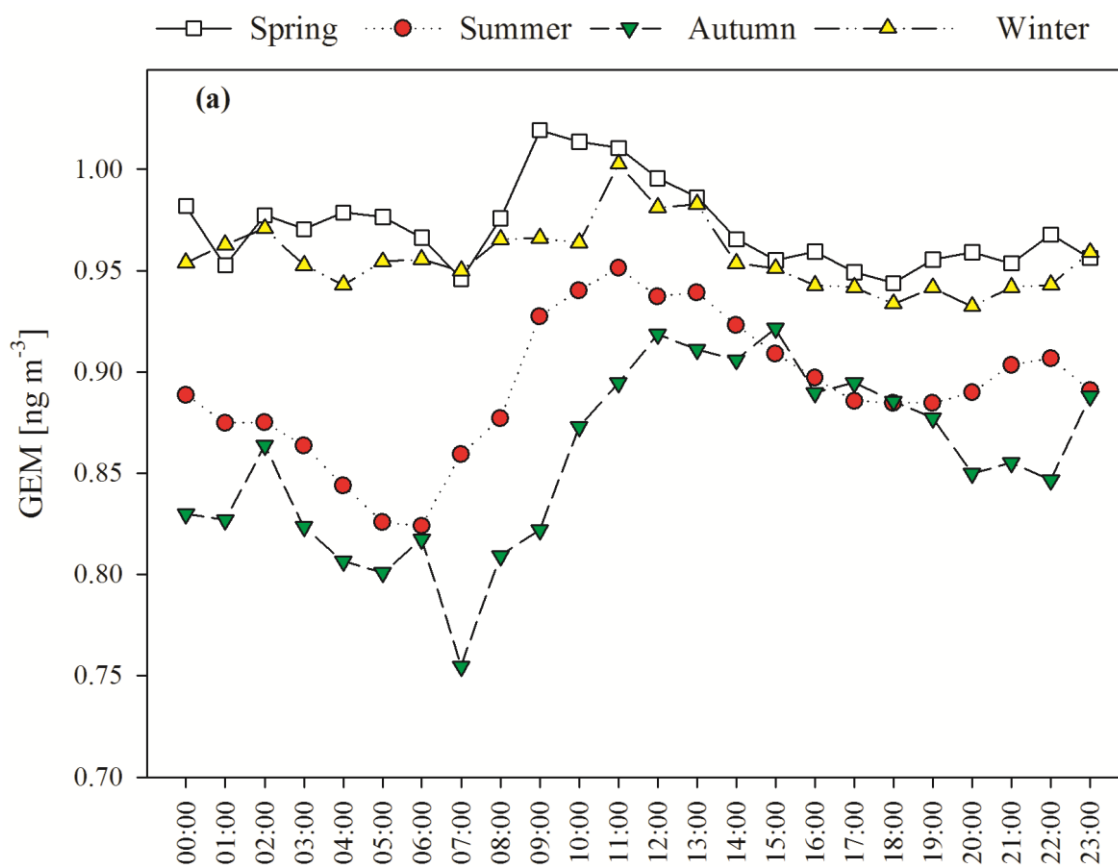
Figure S1. a) Mean hourly GEM concentrations (ng m^{-3}) at the EMMA Station (Nahuel Huapi National Park, Northwestern Patagonia) calculated seasonally for the whole data frame (October 23, 2012 - May 15, 2016).
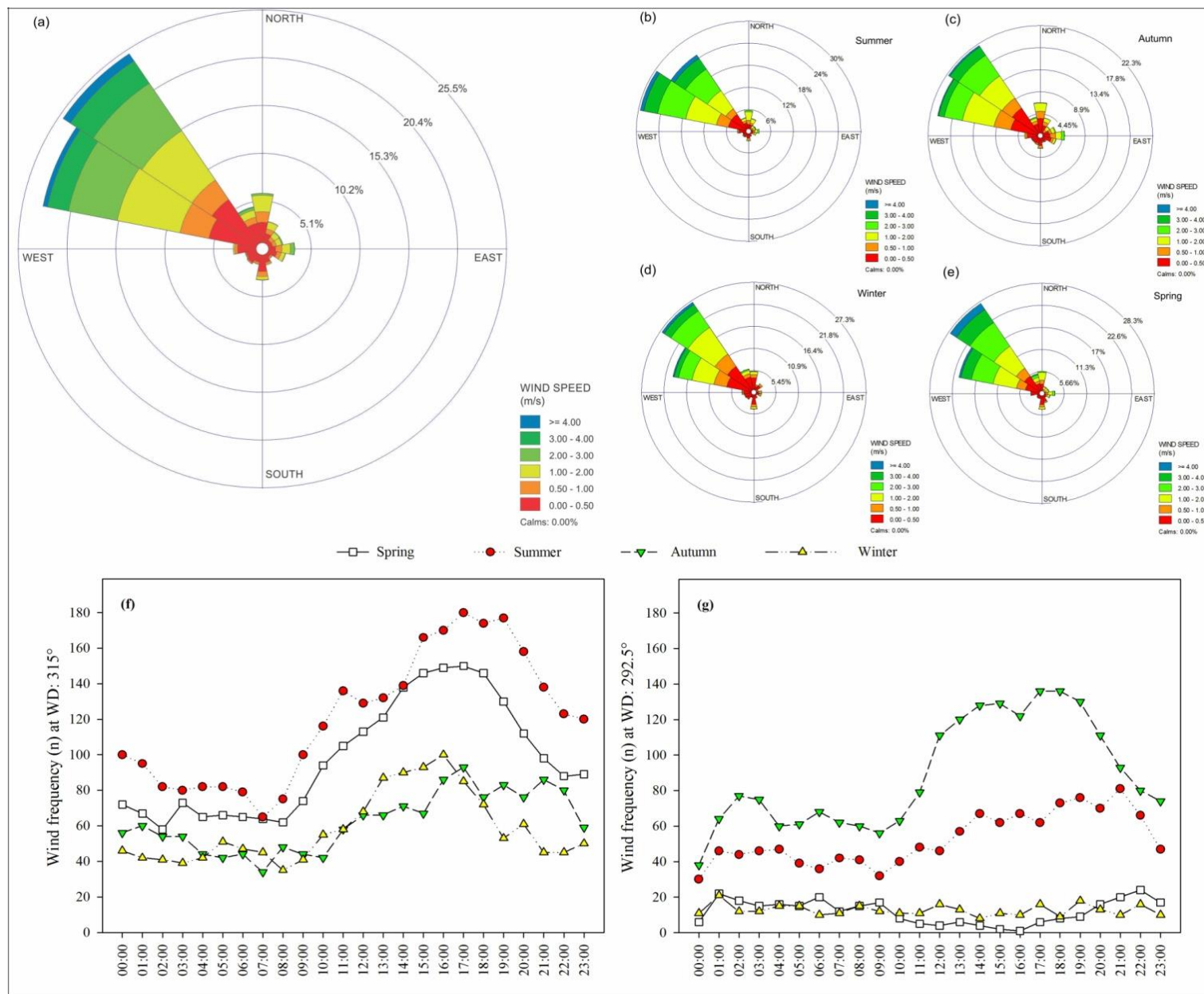
Figure S2. Prevailing wind direction at the EMMA Station (Nahuel Huapi National Park, Northwestern Patagonia) calculated as frequency for: a) the whole data frame (October 23, 2012 - May 15, 2016), b) summer, c) autumn, d) winter and, e) spring; f) daily frequency of the prevailing winds on a seasonal basis (315°), and g) daily frequency of the second prevailing winds in a seasonal basis (292.5°).
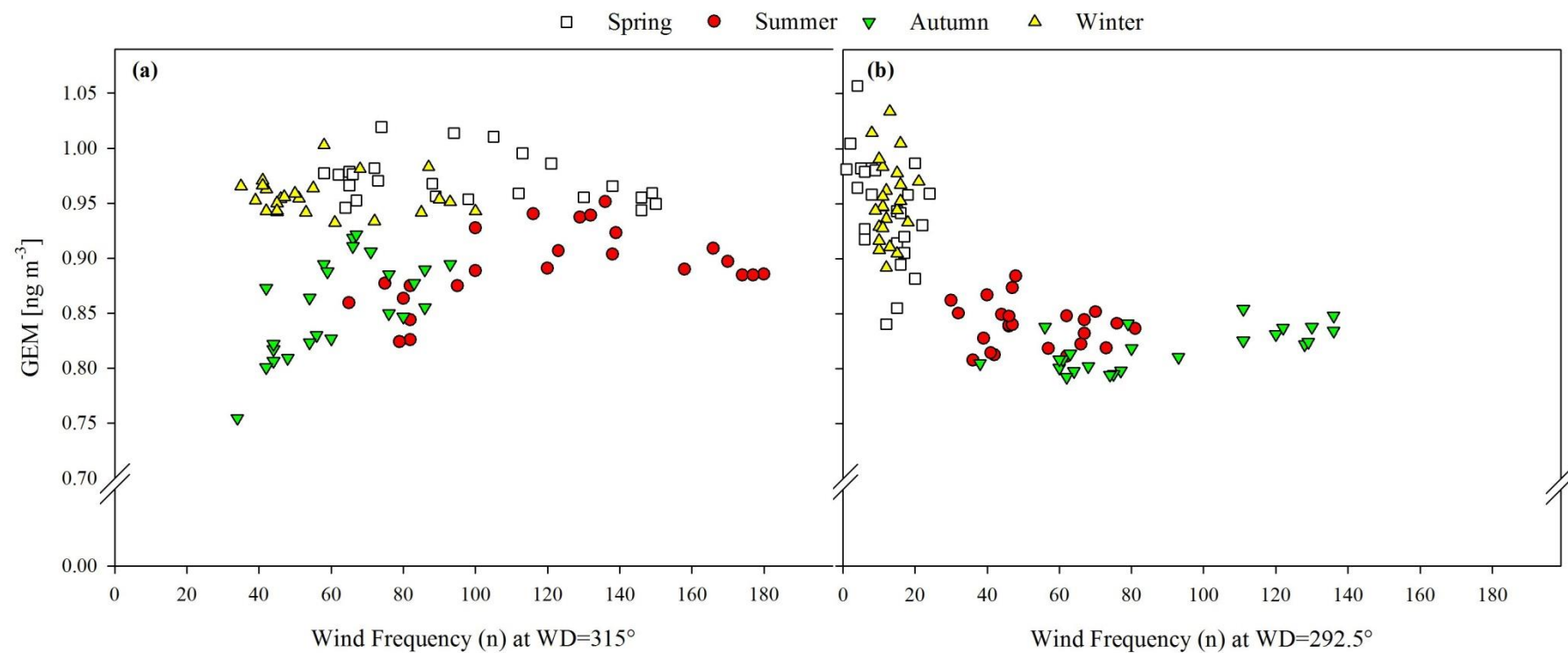
Figure S3.a) GEM concentration (ng m^{-3}) *vs.* frequency of the prevailing winds (WD=315°) and b) GEM concentration (ng m^{-3}) *vs.* frequency of the second prevailing winds (WD=292.5°), during the studied period (October 23, 2012 - May 15, 2016) at the EMMA station (Nahuel Huapi National Park, Northwestern Patagonia).