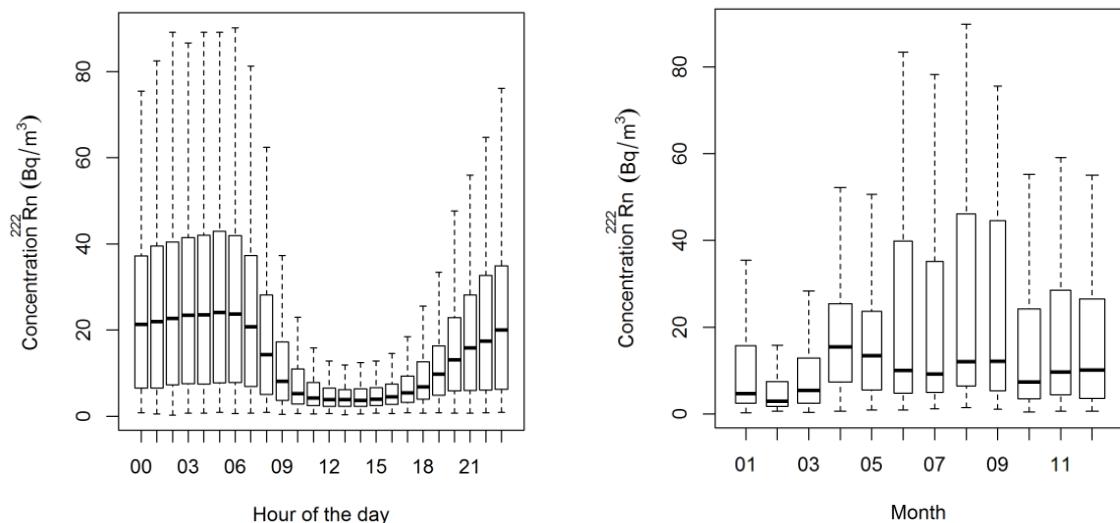


Study of the main processes driving atmospheric CH<sub>4</sub> variability in a rural Spanish region by Grossi et al. 2017 ACPD.

Metropolitan areas	Distance from GIC3 (km)	Position	Latitude LL (°)	Longitude LL (°)	Latitude UR (°)	Longitude UR (°)	Density of habitants (hab./km <sup>2</sup> )
Avila	55	North-East	40.64	-4.73	40.68	-4.66	21
Madrid	120	East	40.28	-3.91	40.55	-3.42	809
Salamanca	84	North-West	40.93	-5.72	41.01	-5.59	29
Valladolid	150	West	41.60	-4.82	41.66	-4.68	65

5

Table S1 Main characteristics of the cities around GIC3 station. LL (Lowest Left Corner) and UR (Up Right Corner) of the rectangular masks used to define to the metropolitan area of the cities in the EDGARv4.2 inventory map.



10 Figure S1 Boxplots of daily and monthly atmospheric  $^{222}\text{Rn}$  concentrations observed at GIC3 between 2013-2015.

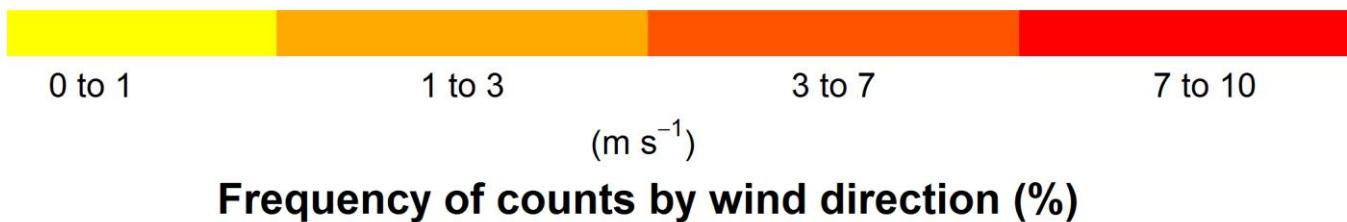
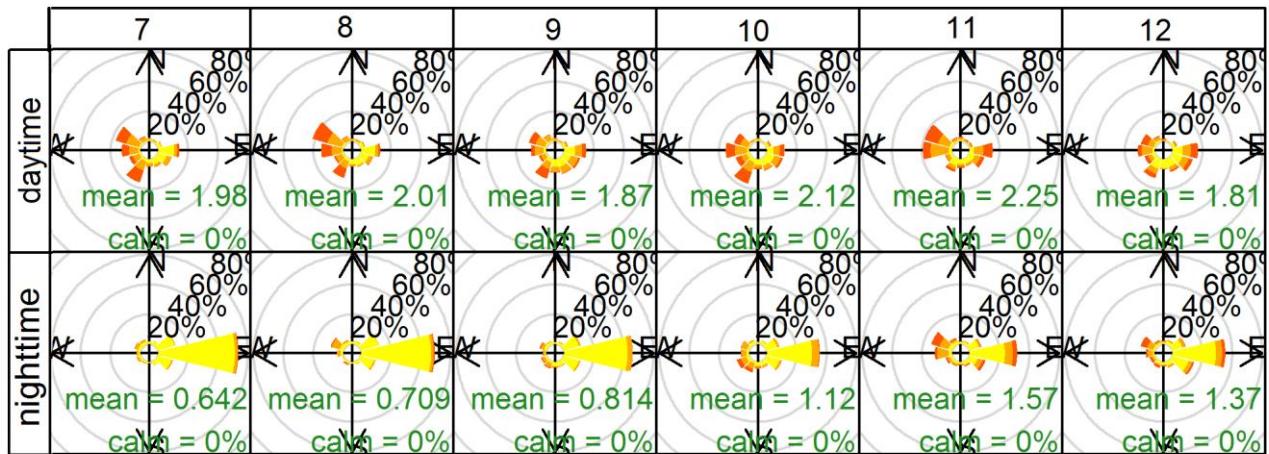
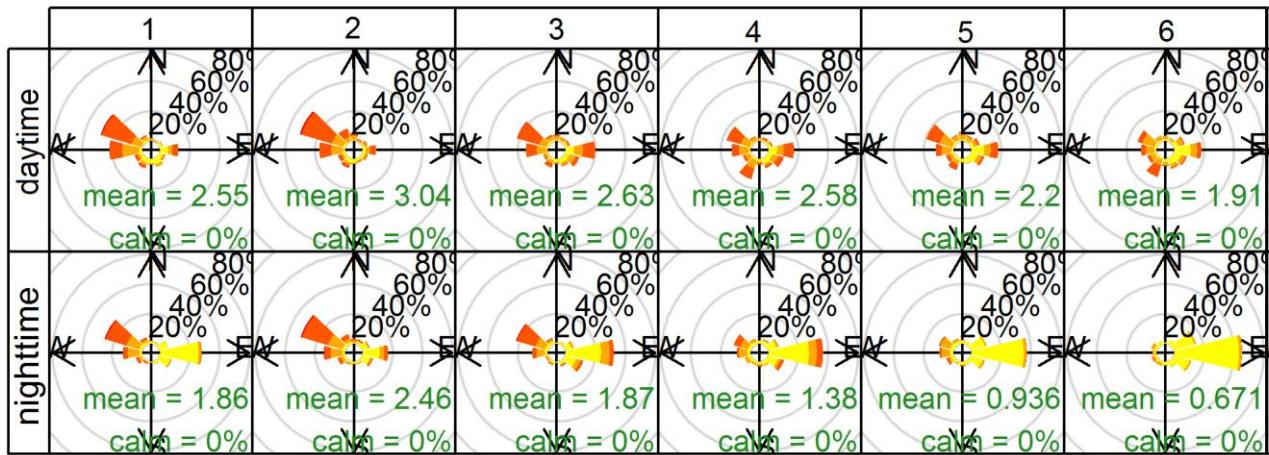


Figure S2 Windrose plots at GIC3 by month (January = 1, February = 2, etc.) and daytime/daynight periods (averages for the period 2013-2015).