



Supplement of

The Pollino 2012 seismic sequence: clues from continuous radon monitoring

Antonio Piersanti et al.

Correspondence to: Antonio Piersanti (antonio.piersanti@ingv.it)

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1 Introduction

This supporting information contains additional experimental data from the two radon monitoring stations (MMN and MMNG). installed in Pollino during the long term continuous radon experiment. These data include: (i) the complete timeseries of data collected by station MMN from December 7, 2011 to October 6, 2014 (Figure S1) and by station MMNG from October 28, 2012 to October 6, 2014 (Figure S2) and (ii) the technical features characterizing the two stations (Table S1). Radon monitoring stations MMN and MMNG have been both developed with a highly sensitive and efficient active detector to monitor radon concentration in ambient air. The system employs an alpha particles scintillator made by a Lucas Cell (Lucas, 1957; Semkow et al., 1994; Abbady et al., 2004) integrating front-end electronics, and measures radon concentration with an adjustable acquisition time (default is 115 minutes); its efficiency is 0.06 [CPM /(Bq/m3)] and the minimum detectable concentration is as low as 3.4 Bq/m3 (see also Figure S1). The radon detectors of both stations are located in a small basement room of an isolated building, not disturbed by anthropogenic influences and without any kind of opening and/or aeration system. We have experimentally verified that, for our purposes, the results obtained by means of this setup are equivalent with respect to a radon probe inserted directly in the soil (see Appendix A of Piersanti et al. (2015)). Simultaneously with radon concentration data, MMN and MMNG acquire local temperature values by means of a specific sensor co-located with the radon one. All other meteorological parameters daily values (external temperature, pressure, precipitation) employed in this work are obtained as short term (12-24h) weather forecast by an Italian weather forecasting site (http://www.ilmeteo.it/). Data from MMN and MMNG stations are available by email request to antonio.piersanti@ingv.it.



Figure S1. MMN timeseries in concentration $[Bq m^{-3}]/115$ min for the entire acquisition period (December 7, 2011 - October 6, 2014).



Figure S2. (MMNG timeseries in concentration $[Bq m^{-3}]/115$ min for the entire acquisition period (October 28, 2012 - October 6, 2014).

Table S1. Technical characteristics of radon monitoring stations MMN and MMNG in the study area.

| | MMN | MMNG |
|---|-----------------------|-----------------------|
| (lon,lat)[deg] | (15.9904,39.8996) | (16.0260,39.8856) |
| alt [m] | 921 | 858 |
| background [cpm] | 0.54 | 0.54 |
| efficiency [$cpm Bq^{-1} m^3$] | 0.0600 ± 0.0008 | 0.0608 ± 0.0009 |
| sampling rate [min] | 115 | 115 |
| low detection limit [cpm] | 0.21 | 0.21 |
| min. deteclable concentration $[Bq m^{-3}]$ | 3.4 | 3.4 |
| start-stop acq.date [dd.mm.yyyy] | 07.12.2011-06.10.2014 | 28.10.2012-06.10.2014 |

References

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