

The authors have done a good job of responding to the reviewers' comments – thank you.

**Some further comments that should be looked at in a revised manuscript:**

- 1) Table 1 is potentially useful but could be improved. Some of the points here also relate to broader discussion in the text on uncertainty.
  - “Sampling flow rate” instead of “flow rate”
  - Detection limit for ANSTO is 0.03 but an approximation is given for the others. Why is this? A footnote explaining, e.g. differences in definitions, would be good.
  - Over what range is the stated uncertainty relevant? This is important for matching the right instrument to the right application or measurement location. A lot of the measurements in the paper's time series border on the detection limit of the ARMON. Is a 20% uncertainty the case at 0.3 Bq m<sup>-3</sup>, for instance? For the ANSTO there is a discussion of some of this on page 5 “a counting uncertainty of around 2% for radon concentrations  $\geq 1$  Bq m<sup>-3</sup>”, and a discussion for the HRM at the bottom of page 6. The discussion of uncertainties and what is stated in the table needs to be completely transparent for comparison between instruments.
  - The portability column could be improved. A grading such as low/high might not be useful. Instead call this “portability considerations” and let the potential user decide based on their specific circumstances. Please state the three measured dimensions of each instrument in the description rather than a volume (which is difficult to physically relate to), and add the mass of the instruments – this is obviously very important too in terms of transportation and handling.
  - Alongside portability is “deployability” i.e. level of automation, consumables required, energy consumption, which might be of even greater interest than portability. The basic monitor also needs peripherals e.g. large pumps, cryocoolers etc.
- 2) The conclusions and abstract need rephrasing and tightening up. Some things below but not exhaustive.
  - The last sentence on page 17 is very confusing. What is “close to one” – the regression line? But that is not referred to in the sentence.
  - “last behaviour” change to “the latter”
  - Line 463 “very good” to “significant”
  - Line 464 “slope of this correlation”. This correlation discussion is confusing given the stated small uncertainties on the slopes stated alongside “within uncertainties well comparable”. Please explain.
  - “underlines that to assure”.. “is important” – revise sentence structure.
  - So does the ARMON help to meet the requirements on lines 476-480? It is stated that the ARMON has great potential but not why specifically in relation to what is needed in networks. Can you explain why further inter-comparison with the ANSTO is needed?
  - Line 34 “daily basis”. Not sure what this means – daily averages or within days?
  - Lines 42 to 44 refer to the same points made at the end of the conclusion. This leaves the reader unclear as to what has been advanced in this work and what is needed next.

Specifics:

“close to and further up” change to “when sampling at 2 and 100 magl”

**Minor corrections/explanations needed:**

Page 5 line 164 “measurement uncertainty”

Page 5 mentions “detection limit”, page 6 mentions “minimum detectable activity”. This should be consistent throughout if these are referring to the same thing.

Table 1 “Need of .. height of inlet” could just be “Sampling inlet height correction”

Table 1 Uncertainty of HRM is 15-20% but in text <20%. Just be consistent with these reported values throughout the text so that the instruments can really be compared.

Page 6 line 190 – give details of the cryocooler

Page 17 – make space between number and unit.. 100 m.. 2 m etc

Page 13 – what is the approximated response time correction?