

Interactive comment on “High-time resolved radon-progeny measurements in the Arctic region (Svalbard Islands, Norway): results and potentialities” by Roberto Salzano et al.

Anonymous Referee #1

Received and published: 30 August 2017

Journal: ACP Title: High-time resolved radon-progeny measurements in the Arctic region (Svalbard Islands, Norway): results and potentialities Author(s): Roberto Salzano et al. MS No.: acp-2017-668 MS Type: Research article

General comments

The manuscript deals with radon progeny measurements in the High Arctic. The subject is certainly interesting to the readers of ACP and the data obtained during the field work is rare. My main comment is related to the instrument calibration. The results are presented as count rate per cubic meter. The authors should try to convert these to activity concentration units, otherwise comparing the data to other radon progeny

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observations is impossible. I understand the difficulties associated with this, detector efficiency for different nuclides, variations in the radon progeny disequilibrium etc. Still, the authors should do this, even with bold assumptions. One way would be comparing the operated instrument to other type but calibrated instruments. This would allow the comparison of activity concentration results to other observations in the Arctic area. Hasn't there been a Heidelberg radon monitor at Mt. Zeppelin monitoring station at Ny-Ålesund?

Specific comments

I believe the terms NORM and TENORM are usually used with materials associated with human activities, not radionuclides in the atmosphere. An example is oil drilling sludge containing lead-210 or radium-226.

The terms $S\beta$, $L\beta$, and $C\beta$ could be replaced with appropriate IUPAC names after the calibration procedure mentioned above.

Technical comments

In the literature reference list Sthol should be corrected to Stohl.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-668>, 2017.

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