

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

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The aim of this study is to highlight the potentialities of high-time resolved measurements of radon progeny in the Arctic region. Furthermore, our intention is to outline the importance of radon-derived information in remote areas where this kind of information are still limited. We know that we considered a single-filter technique that has a lot limitations concerning detection limits and absolute estimation of radon concentration. From this perspective, we cannot support that single-filter methods are better than dual-filter systems that represent probably (for the reasons mentioned in the comments) the best available technologies. The term “best compromise” was referred

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to our logistical resources and we will use all your suggestion to better focus advantages/disadvantages of our technique. Concerning the results, the novelty of our approach, respect to the 20-years literature about single-filter measurements, consists in the introduction of the near-constant decay component. All the presented calculations are, in fact, not included in FAI instruments or similar systems. From this perspective, we think that there is a significant contribution for investigating variations in terms of natural radioactivity in areas where the Arctic haze occurs. Some of your comments will surely help us to increase the depth of our data analysis. Thank you in advance.

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