

## ***Interactive comment on “30 years of European Commission Radioactivity Environmental Monitoring Database (REMdb) – an open door to boost environmental radioactivity research” by Marco Sangiorgi et al.***

**Anonymous Referee #1**

Received and published: 13 February 2019

Referee comments:

30 years of European Commission Radioactivity Environmental Monitoring Database (REMdb) –an open door to boost environmental radioactivity research by Marco Sangiorgi et al.

The manuscript deals with a database containing radioactivity data from environment, food chains etc. The database data flow relies on the EU member states' authorities that regularly send national data to the European Union. The paper is well written

C1

and it deserves to be published, especially as the existence of REMdb is not that well known. Even I, after 30 years work experience with environmental radioactivity, had never heard of such a resource. I suggest publication of the manuscript in Earth System Science Data once the authors have taken into consideration some minor suggestions found below.

General comments

To put the REMdb to a wider context I wonder if similar more or less public databases are available elsewhere? Are the MS competent authorities the only data providers? University datasets often provide useful information and nowadays the funding organizations often require an open data policy. Are there plans to extend the time period backwards from 1984? Important data was gathered during the period of atmospheric weapons testing.

Detailed comments

Citation on page 2, line 23: Do the authors mean this? International Atomic Energy Agency & World Health Organization. (1996). International basic safety standards for protection against ionizing radiation and for the safety of radiation sources. Vienna : International Atomic Energy Agency. <http://www.who.int/iris/handle/10665/41593>

Page 5, line 24: "In 1996, during the Chernobyl accident, there was..." 1986?

Page 6, line 31: "In fact, gross beta analysis does not detect weak beta-emitters such as those emitted by <sup>3</sup>H, <sup>14</sup>C, <sup>35</sup>S and <sup>129</sup>I." Maybe the authors should tell that total beta activity results are always dependent on the instrument used. Some instruments can measure even low-energy beta particles.

Page 7, lines 8-12: Maybe the gaseous iodine should also be discussed.

Page 7, Lines 13-14: "In most countries filters are changed daily and analysed for total beta activity following the decay of radon decay products." How about "after the decay

C2

of short-lived radon progeny"?

Page 7, lines 17-19: "  $^{137}\text{Cs}$  and  $^7\text{Be}$  are normally measured with a gamma spectrography at the same time, therefore the amount of reported measurements for both nuclide should be the same, but it does not happen because of lack of harmonization between countries." spectrography -> spectrometry? both nuclide -> both nuclides? Maybe the amount of reported measurements for both nuclides differ also due to "<MDA" values?

Page 7, lines 21-22. Is beryllium-7 significant from dose point of view? If so, please, add a literature reference.

Page 7, lines 25-31: Please, clarify the term "surface water". Does it mean fresh water in lakes and rivers or is also surface water of oceans included? I would expect the radionuclide content of water and intake by drinking to be negligible compared to aquatic food chains ending to man.

Page 8, lines 9-11. Is the high  $\text{Cs-137}$  content of ocean water in the Irish Sea due to Sellafield emissions or the Chernobyl accident?

Page 8, lines 20-21: "Eventual presence of  $^3\text{H}$ ,  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  and radium may also be due to man's activities." Isn't the presence of  $\text{Sr-90}$  and  $\text{Cs-137}$  solely due to anthropogenic activities?

---

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-160>, 2019.