

## ***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 #2**

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### General comments

The manuscript “30 years of European Commission Radioactivity Environmental Monitoring Database (REMdb) – an open door to boost environmental radioactivity research” describes the REMdb database which is a product of a more than a three decade-long radioactivity monitoring effort and collaboration of European member states. The long time span, vast geographical coverage, variety of sample types and the immense number of measurement records result in an invaluable dataset, which will undoubtedly prove of great value for the scientific community. In this light, the

C1

manuscript fits very well into the scope of the journal “Earth System Science Data” and can be considered for publication after the authors address the comments posted below.

The manuscript provides links to yearly and bulk datasets which can be downloaded as Excel files. Data from REMdb can also be accessed by an online query tool where the user can personalise the search by location, sample type, observation period, export format etc. The files on the provided links and the files provided by the online query tool are compliant with the descriptions provided in the Data Availability section.

The manuscript accompanying data does, however, have a major issue which the authors should discuss with the Editor before revision. The present database is composed of two datasets. While the first one spanning between 1984-2006 (De Cort et al., 2007) is compliant with the data policies posted on ESSD websites and further elaborated in a recent Editorial (Carlson and Oda, 2018), the second dataset (2007-2016) is not. Namely, it does not have a DOI nor is it fully publicly available (explicit request by email is needed for access; P10 L18). Additionally, the part of the Disclaimer in P11 L10-11 (“The European Union reserves the right to . . . discontinue temporarily or permanently, the REM Database. . .”) could prove controversial regarding the above mentioned data policies of ESSD.

### Specific comments

In P1 L9 the DG abbreviation is not explained.

P3 L10 and P1 L17: The abstract says the database contains measurements since 1984, while in page 3 it says since 1988

P7 L15 and Fig. 8: “Figure 8 shows the amount of measurements by country for 137Cs and 715 Be in the air.” For unambiguity the authors should clarify that this refers to the total amount of measurements in the database.

P7 L26: “aquatic” is probably more appropriate than “marine”?

C2

Section 4: The “Data availability” section should include procedure for data after 2006, i.e. it should be explicitly stated in P10 L18 that the full database also contains measurements after 2006. Additionally, I suggest the authors do not only mention, but also include a short description of the REMdb online query tool and its functionality as it offers useful search options and additional export formats which many readers could find beneficial.

P10 L11-14: The abbreviations used in the Excel files should be mentioned in the paper, for example: “locality name (LOC\_NAME),..., apparatus description (APT\_DESCRIPTION), nuclide (NUC\_CODE). . .”

Figure design of the graphs in the manuscript is variable, for example: some have a frame (Figs. 2, 8-11) and some do not (Figs. 3-6); font sizes of axis titles in Figs. 5 and 6 are much larger compared to similar graphs in the manuscript.

Fig. 7 shows the sampling distribution from 13 years ago. As the authors present the database up until 2016, a more recent picture would be appropriate.

Fig. 8: The legend in the figure is so small that the reader cannot see which symbols are used for <sup>137</sup>Cs, total beta and <sup>7</sup>Be

Fig. 9a: Again the legend is too small to recognise the symbols of the radionuclides

Figs. 9a and 9b: There should be only one subscript per figure

Figs. 8-11: I suggest to add “in REMdb” to avoid ambiguity (e.g. “Total amount of measurements in REMdb (dense network) for sample type airborne particulates. . .”)

Technical corrections

P2 L4: “. . .the rest being associated. . .” instead of “. . .being the rest associated. . .”

P3 L24: under or equipped, not both

P4 L15: “. . .since year 2002, but Poland made available samples for year 1986” should

C3

probably be “. . .in 2002, but Poland made available measurements since 1986”?

P4 L31: “each other” instead of “each other’s”

P5 L7: “It is” instead of “It is”; “. . .attention to field. . .” instead of “. . .attention over field. . .”

P5 L8: “represents the best” instead of “represents best”

P5 L12: “in De Cort et al. (2004)” instead of “in (De Cort, et al., 2004)”

P5 L17: “. . .106 measurements. . .” is probably “. . .10<sup>6</sup> measurements. . .”?

P5 L25: “1996” is probably “1986”?

P5 L26-27: “gradually lost” instead of “lost gradually”

P8 L9: “Povinec et al. (2003) analyse. . .” instead of “(Povinec et al., 2003) analyse. . .”

P8 L27: “(<http://www.radioecology-exchange.org/content/monitoring-sr-90-and-cs-137-milk-finland>),” instead of “(<http://www.radioecology-exchange.org/content/monitoring-sr-90-and-cs-137-milk-finland> respectively)”

P9 L15: Link does not work (browser message is: server IP address could not be found).

DOIs are missing in the References (P11 L18, P11 L23, . . .). The readers would also benefit if the authors provided URL’s and/or DOI’s of public reports in the References (e.g. De Cort et al., 2004)

References

Carlson, D. and Oda, T.: Editorial: Data publication – ESSD goals, practices and recommendations, *Earth Syst. Sci. Data*, 10, 2275-2278, <https://doi.org/10.5194/essd-10-2275-2018>, 2018. De Cort, M., Tollefsen, T., Marsano, A. & Gitzinger, C.: Environmental Radioactivity in the European Community 2004- 2006, <http://dx.doi.org/10.2788/25616>. 2004. De Cort, M.; Sangiorgi, M.; Hernandez Ce-

C4

ballos, M.A.; Vanzo, S.; Nweke, E.; Tognoli, P.V.; Tollefsen, T.: REM data bank - Years 1984-2006. European Commission, Joint Research Centre (JRC) [Dataset] doi:10.2905/jrc-10117-10024 PID: <http://data.europa.eu/89h/jrc-10117-10024> . 2007

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