

Dear Mrs. Sparnocchia,
the following changes have been made:

“1) Improving the discussion of the results comparing them with previous estimations (both referees) and particularly with the companion paper by Schneider et al. submitted to this same issue (referee 2). In any case I will appreciate if you will comment why your definition and related results are more reliable and robust of those from others, and justify the possible differences. In particular, the results of Schneider et al. should be commented in the light of your improved method, showing if and where they are definitely surpassed.”

We have discussed the suggestion of Reviewer #2 in our response. We do think these results are more realistic than previous work in this region. We believe so since we do have a set of three independent transient tracers to work with, which has previously not been the case.

“2) Provide an estimate of the uncertainties associated to your mean ages, as well as data precision, confidence of analytical methods, what method is used for a tracer, etc.”

This is also discussed in our response to Reviewer #2.

“3) As regards a comment posted by B. Hochwimmer, I wonder if he refers to the possible importance of tracers' input from the sea-floor (e.g. terrigenous ^3He), and in this case, please add a comment in the text since I think you have neglected this component for its reduced magnitude. Is it?”

We agree with you, and we have added some text to make this clear. See also response to Mr. Hochwimmer.

“4) You should give information on the size of your data base, How many samples do you have for different parameters? How many of them are used in the discrete calculations? The latter is important to define their robustness.”

A table with this information is now provided.

“5) Eqs. (8) and (9) are lacking a dependency to t_s in the integral. Moreover, comparing eq. (8) with eq. (1) in the manuscript by Schneider et al. (this issues), I note they are also accounting for a radioactive decay term in the right side you don't have in your formulation.”

The equations were revised, e.g. a consistent use of variables, and the missing equation parameters in the text were introduced.

“For the remaining, please refer to the referees reports, and also check carefully the text as already stressed by one of them.”

Done

In summary: the following changes of the paper manuscript have been made as response to the comments by the referees and your annotations:

- **the manuscript has been checked by a native speaker so that most of the misspellings and corrupt sentences were corrected**
- **mean age results have been added in the abstract**
- **consistent terms for the different TTD models have been added**
- **the introduction has been restructured and extended with respect to existing work on ventilation of the Mediterranean. Previously published methods have been highlighted and compared with our work**
- **the equations have been revised**
- **an additional description of terrigenic ^3He has been added in the section of radioactive transient tracers (sea floor as source, helium-tritium age, etc.)**
- **the technical section has been revised for a better understanding of the measurement techniques of each tracer**
- **the figures have been corrected and improved (colorbars added, labels corrected, details highlighted, etc.)**
- **a section of uncertainties has been added including an overview of precision (table), accuracy, error sources and the absolute error of a mean age estimates (figure)**
- **overviews on data statistics are provided (tables)**
- **further information about TTD model application and their differences have been provided with special respect to the work of Schneider et al. (2014)**
- **existing methods on how to constrain a TTD model have been introduced and compared with our approach**