

Dear Guillaume

Thank you for the revised manuscript and the responses to both reviewers and to the published comment. You have taken into consideration most of the recommendations and explain why you did not wish to take on board the others. Thanks also for the revised manuscript with line numbers and clear answers that refer to the modified lines in the original article. It helps a lot.

I agree with most of your choices, but would like you to reconsider these few minor points:

Dear Christine,

Thank you for handling our manuscript and asking for these last modifications. Please, see below our responses. We hope, they are sufficient for the paper acceptance.

* For this type of study, sample size and representativeness are very important. Reducing the sample size also reveals seasonal variability (next point), which is not what is desired here. In the method section, you mention sampling " (30-100 mg) of the outermost layers". Does this sampling cover several seasons? Or is it carried out according to the length of the shell in order to remain within the same hydrological context? Can you clarify this point, or even add photos of the sampling, selecting those representing the extremes of sampling? After all, we're going from simple to triple in the mass sampled.

* the seasonal variability raised by Mr Fontugne may explain certain outliers. Depending on sampling methods, the sample may only record a very short period of life. This is an important and classic bias with the reduction in sampling size. Could you rethink this idea in the discussion, especially at river mouths and in areas of high seasonal variability? Your article would benefit from adding this possibility to the discussion.

We respond below to these two closely related comments.

Our shell sampling does not differ much from that commonly detailed in the literature focused on the prebomb marine reservoir age reconstructions. For instance :

Southon, Kashgarian, Fontugne et al. (2002): "*The shells were cleaned by washing and grinding the surface. Aliquots a few mm square—large enough to cover at least one entire year of growth—were taken from near the outer (growing) edge of each shell. The carbonate was crushed to a 0.5–1 mm powder, etched with 0.1N HCl to remove 30% of each sample, and subsamples of 10–15 mg were hydrolyzed to CO₂ with 85% phosphoric acid.*"

Tisnérat, Paterne, Métivier et al. (2010): "*For radiocarbon analyses, a slice of approximately 18 mg was sampled from the outer lip of the shells. The sample was mechanically cleaned by sand blasting to remove superficial contamination, reducing the weight by ca 20-30%. For most of the samples, the temporal resolution is estimated at ~2 years,*"

Reimer and McCormac (2002): "*Only the outer edges of the shells were used for dating so that shell deposited nearest to the time of death was sampled.*"

Siani, Paterne, Arnold et al. (2000): "*Shell samples (about 15 mg of carbonate) were etched with 0.5N hydrochloric acid and, after a 50% loss, were rinsed with deionized water to remove surface contaminations.*"

Compared to the other studies, our shell samples are 2 to 7 times bigger than sample sizes generally investigated in the literature. The range of 30-100 mg we report here is due to the species studied: *Senilia senilis* has large and thick shells (up to 8 cm), whereas *Donax rugosus* is a species which is rather small and thin comparatively (up to 3 cm).

Some of the studies cited above indicate that their 15mg sampling was sufficient to cover 1 or even 2 yrs of the specimen growth and thus avoid the impact of seasonality of the results. If they are right, this should also be the case for our study. However, without carrying out a complete sclerochronological study for each shell, it is clearly impossible to determine whether the shell samples cover entire years or a few seasons, which, at the very least, is already an average.

A full sclerochronological study for each is far beyond the scope of this study: 1) it would involve the complete destruction of each sample whereas some of them are unique and need to be handled with care and damaged as little as possible to be preserved for the next generations; 2) it would much too costly for the deseired objectives; 3) most of the similar studies do not go that far in their investigations and we believe that the readers are aware about the limitations of prebomb reservoir age reconstructions.

We feel that we already mentionned this limitation clearly station at line 585, owing to M. Fontugne's comment:

"Finally, we cannot fully rule out that these higher values represent some sub-annual variability of up to 200 ¹⁴C in the local marine reservoir age as evidenced elsewhere (Jones et al., 2007, 2010)."

* Reviewer #2 also points out that the true measure of 14C is F14C and that the presentation in age 14C is a logarithmic transcription of F14C. I agree. This is also the recommendation of the 14C community (see e.g. Reimer 2004). This is all the more true as 14C ages should be issued rounded (Stuiver and Polach 1977), even if this is not followed by all 14C labs. So, to follow the community's logic while respecting long-standing practices, I recommend presenting results according to SacA-xxx F14C= xxx± xxx (540 ± 23)

We modified the presentation of the datalist accordingly.

* the descriptive list of samples is very important and should not be put off to an appendix. I agree with you. However, reading it is tedious. Can you imagine grouping the information in a table (in landscape mode)? Try it, if it doesn't work then let's stick with the list, perhaps in double columns (if this is allowed in the journal layout)? I'll leave you to consider the various options to get the reader to the end of the article. Attached a proposition of table.

Thank you for your proposition of table. We followed this template, and we modified the presentation of the datalist accordingly.

Many thanks in advance for the revised version and thanks again for considering Geochronology to publish the results of your research.

All the very best

Christine Hatté

Many thanks again for handling our paper.

Guillaume on behalf of all coauthors.