

Interactive comment on “Sea level trend and variability around the Peninsular Malaysia” by Q. H. Luu et al.

Anonymous Referee #1

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Comments on 'Sea level trend and variability around the peninsular Malaysia' by Luu et al. (OSD)

This is a short paper based on a straightforward analysis of some Malaysian MSL records downloaded from the PSMSL, climate indices obtained, regressions and correlations performed, and results presented. It is not very profound but I am sure the work has been done well technically, and the paper will do no harm in showing the value of sea level data in a national context.

The main problem with the paper itself is that the English of the text is poor, even though I suspect it has been looked over already by the OSD editors. It is understandable but

C541

the frequent odd wording detracts from the pleasure of reading it. I suggest that the text is revised by someone else.

Some other comments below:

1520, line 5 - 'is assumed' → 'is shown can be assumed'?

'At annual' → 'At seasonal timescale' presumably

section 1 - this reads like a literature search. You could refer to a couple of other papers, for example Tsimplis and Woodworth (JGR, 1994) showed that the seasonal cycle is often different for countries with two coastlines such as Malaysia - India, Thailand, Korea are other examples. Also there have been several papers recently by Merrifield and colleagues which discuss the role of changing wind fields on secular sea level changes.

1525, line 1 and elsewhere - I think most sea level people now agree that the word 'absolute' is not a good one. There is not much 'absolute' about them. What you are referring to is tide gauge data to which VLM rates from GPS have been added, so you obtain a 'geocentric' rate just like for altimetry. These yield 'ellipsoidal heights'.

1526, 10-16 - I don't see a consistency between these numbers and those in Table 1. I can't see where the -0.2 comes from, and the others are similar to but not the same as Table 1.

Maybe some of the small differences come from using the original values versus the gap-filled ones? But that filling is a very marginal one, as Figure 4 shows.

There is a problem with all the rates quoted in this paper though, in that they come from very short records. Also they have a lot of interannual signals, discussed elsewhere in the paper, which implies serial correlation of the annual means. So, have the standard errors on the rates been calculated by ordinary least-squares, and if so how much do you think the errors may have been underestimated?

C542

line 22 - by all means refer to fig. 3c in the text, but also then you should refer to 3a and b.

The correlations with ENSO and IOD are interesting. But a sentence on how they are themselves correlated would be useful, and also the fact that there have been only two major IOD events I think in recent years.

p1529, 17 - this isn't true. By 'on the GIA' you mean 'on the use of GIA models' but (a) such models are not perfect even in formerly-glaciated areas (what you mean by 'polar areas'), (b) you could argue the models are more consistent in the far field in fact, such as Malaysia, and (c) the real issue is that there are always many geological processes operating at any one location. You could perhaps refer to several papers by Guy Woppelmann.

Last sentence of section 3 - this is an important recommendation, to have more GPS at tide gauges. What are you going to do about it? Who is the recommendation aimed at? A Malaysian ministry or academics or the international community? You could for example refer to the latest GLOSS Implementation Plan available from the PSMSL web site which emphasises why such GPS measurements are needed.

1535 - I don't like the SLR acronym which can mean 'sea level rise' or 'satellite laser ranging' and anyway what you mean is 'change' and not 'rise' as a positive change is not a given always.

Also, how did you average the individual rates into regional average ones?

Figure 4 - I think the caption should explain, in brief, how you pinned the red lines to the black ones - same means over some common period? Also make clear to the reader that the black ones are relative sea level and the red are geocentric - this can be either in the text or caption.

Figure 5b is missing?

Figure 6 - say clearly in the caption that the yellow band in (a) is magnified in (b),
C543

although obvious to you. And that distance is measured clockwise along the coast somehow.

In conclusion, I would be happy to see the paper progress from OSD to OS as long as the points above can be attended to and if the text can be cleaned up.

Interactive comment on Ocean Sci. Discuss., 11, 1519, 2014.