

## ***Interactive comment on “Sea level trends in South East Asian Seas (SEAS)” by M. W. Strassburg et al.***

### **Anonymous Referee #2**

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The manuscript discusses decadal sea level trends in the South East Asian region for the period 1950-2009 on the basis of two sea level reconstructions. Long term trends are also inferred for small separated bodies of water, which are then used to estimate and remove the contribution of the PDO. The residual regional sea level trends, after the natural decadal oscillations from PDO are subtracted, are discussed in the context of global warming.

The topic addressed in the paper is of interest, as it is focused in a region of high rates of sea level rise observed during the altimetry period, something already discussed in earlier works properly cited. My major concern is the limited information on the performance of the two reconstructions in the studied region. It is known that global sea level reconstructions based on EOFs, such as that by Church and White (2011), are not able to properly characterize regional variability. The authors themselves discuss this partial inability in their recent paper Strassburg et al (2014) in JGR- Oceans (by

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the way, not in the reference list!). In particular I would like to see some reference to the altered inter-annual to decadal sea level changes in the reconstruction, as pointed out by Calafat et al (2014).

Authors should be more careful and provide more details on the data used. For example:

- what are the tide gauges in the region
- how does the reconstructed sea level compare with both tide gauges and altimetry in the region (as pointed out above)
- how does the inclusion of a constant EOF (EOF0) affect CW reconstruction at a regional scale (the discrepancies among the two reconstructions are described in the results section but no insight is given to explain them).

Even if all these issues are presented in earlier works, it does not prevent this paper to be self-consistent. Overall I think the paper is in good shape and should be published if these issues are conveniently addressed. Other minor comments are listed below.

Minor:

- lines 5-8 in the abstract are unclear, please rephrase
- line 22 in results: Meyssignac
- line 20 in discussion: it is not clear why regional sea level in SEAS will be lower than GMSL in the next two decades. Lower than present does not necessarily mean lower than future GMSL rise. This seems to be in conflict with line 22 below.

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Interactive comment on Clim. Past Discuss., 10, 4129, 2014.

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