

Interactive comment on “Reassessment of long-period constituents for tidal predictions along the German North Sea coast and its tidally influenced rivers” by Andreas Boesch and Sylvin Müller-Navarra

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Editor comments on “Reassessment of long-period constituents for tidal predictions along the German North Sea coast and its tidally influenced rivers” by Andreas Boesch and Sylvin Müller-Navarra

I have looked at the 3 reviews and your replies - many thanks for those.

C1

I agree with all 3 reviewers that it would be interesting to see this paper published, and as R1 says it would be useful in making the HRol method more widely known. I have a few small comments myself below. And then I look forward to seeing a revised version.

One is that paper does have the feel of a highly-technical internal report and it might help to have an introductory paragraph in Section 6 (perhaps) to show that you know that there have been other methods for analysing HL waters in the past. Doodson (1951, IHO Special Publication No. 36) is the obvious one, but there is also a short discussion of the history in Bruce Parker's NOAA Tidal Analysis and Predictions Manual (NOS CO-OPS No. 3, p106-109) which you might wish to refer to.

Another is the comment by R1 about comparing the method used here to more standard harmonic methods, which you replied to in your paragraph (3) saying this was work in progress. But surely a tidal agency like the BSH is called on to produce hourly (or similar) tidal values for use in science or practical applications and you must have those data sets to hand. As regards the present paper it would not take much work to make a comparison for one or two places (say Cuxhaven). Last year I picked up a leaflet at the BSH which says 'complete predictions of water level curves at Cuxhaven have been available on the internet since May 2010'.

Finally, on pages 6-8 or so I got a little lost with the discussion of the rankings. I understand the method for a particular station of course, but the rankings must be different for different stations so I was unclear how you arrived at the final choice. Could you make that clearer?

I also agree with R1 that, while the paper is completely understandable, the text could stand looking over by a native English speaker. I list a few trivial suggestions below and some other odd remarks.

p1, 15 long time series data

36 has been used

C2

[p2, 11 - as an aside, I wondered at this point what Lubbock would have made of this paper. It is nice to see a method which has a little more physics in it than the harmonic method.]

60 eight time series

89 Could you give a reference to the Alphabetical Doodson Number e.g. the IHO Harmonic Constants Specification 2006? As far as I know this is not used much by the ocean tide community (it was invented by the UKHO I think) although does no harm to include it of course.

p4, 12 - on the German coast and in rivers

23 at the BSH tidal

26 tide gauges at Cuxhaven

40 The locations of all tide gauges

Figure 1 caption: Locations of tide gauges in the German Bight from Table A1.

53-60 I am not sure about this. I suspect that when most agencies produce tidal constants for a particular year they do not remove big storms; they are part of the sea level climatology, leading inevitably to ambiguity as to what defines the tide. So, in your case does this storm surge removal make any difference to the results?

68 as a spectral

Figure 2 caption line 3: Notice the upper part of the logarithmic scale is truncated

p5, 10 - time series

17 frequency-dependent

p7, 21 This is demonstrated in the lower panels

42 Conversely, the partial tide

C3

45 I would add '(ms \leq 8)' after 'month'

p8, 7 which occur at R=4 in the list cannot

17 - you might also like to refer to papers by Amin which present departures from nodal variation from the equilibrium tide expectations in this region.

p9, 12 fulfil

Figure caption 7, line 2: add (p.t.) after tides so the insert is explained

Tables 5 and 6 - is it necessary to have gauge number in these tables

32 percentage changes

38 residuals

39 for the two sets of residuals (times and heights)

45 no major improvements

49 peaks are clearly reduced.

Figure 8-11. It might be good to make 8 and 10 into 8(a,b) and 9 and 11 into a new 9(a,b). Define (p.t.) in the caption again.

p10, 29 four frequencies were reduced

p11, 3 will be used

p13, 4 correspond to

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C4