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Discussions

Interactive comment on "The global distribution of the M1 ocean tide" *by* Philip L. Woodworth

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Hi Phil, Thank-you for writing this up and the talk you gave on it last year. I'm sure it'll get sent to review a bit further away, but in the meantime here's a few points I've picked up on.

The distinction between M1 and M1' is quite hard to keep track of, especially as existing software conflates them, and M1' is the degree-2 constituent usually labelled M1. Is there a clearer notation you could adopt, eg d2-M1 for M1' and d3-M1 for your M1? It might also help to define this up front in case we end up looking at other degree-3 tides in the future. Also M1' is used in the abstract before definition.

Confusion with NO1 is also likely, especially for users of the Foreman-derived codes (including T_tide and U_tide). In these codes only NO1 is named in the standard constituent list, with the same frequency as line 7 from Table 1. (In contrast, only M1

is named in the NOCtide or TIRA list, with the same frequency as line 4). Could you clarify the difference?

Also, though P&W 2014 does have an explanation of the degree-2 & degree-3 polynomials, it's not easy to find unless you know what you are looking for. A brief explanation here would be useful.

The abstract could include an estimate of the maximum amplitude. Oh yes, and there's no scales on some of the amplitude maps (I was quite disappointed when I realised it was mm rather than cm!)

p7 line 21: Presumably large V could also arise from frequent tide-surge interaction, which may be a contributing factor in the North Sea? Figure (5c) doesn't exist, should it be Supp. Fig. 3c?

In Table 1, frequency is given as degrees/hour not cycles/hour.

Are there other significant degree-3 tides that you know about, or is M1 a lot bigger than the rest? What led you to pick up on M1?

Thanks, Jo

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