Ocean Science Discussions

Ocean Sci. Discuss., author comment AC2
https://doi.org/10.5194/os-2020-121-AC2, 2021

Reply on RC2

Philip L. Woodworth et al.

Author comment on "Preface: Developments in the science and history of tides" by Philip L. Woodworth et al., Ocean Sci. Discuss., https://doi.org/10.5194/os-2020-121-AC2, 2021

Many thanks for the kind remarks on the preface and for adding your own insights into the history of the LTI. The special issue has been an enjoyable experience, and, yes, we believe that there will be a printed version of the whole issue at some point.

page 2 - you said "The editors might have added biological tidal interactions." We have included that now in the last paragraph in section 3.

We have the following responses to your list of comments on the following lines in the submitted version:

lines 182, 207, 370, 409, 432, 434 - edits have been made along the lines suggested.

line 268 - we agree this does point to a wider historical study on tidal research. But for another day maybe!

line 301 - thanks for spotting this. The paragraph has been changed to read:

The term ‘radiational potential’ was introduced by Walter Munk to account for motions of a tidal nature, which are caused, directly or indirectly, by the Sun's radiation, instead of being of astronomical tidal origin due to the Moon or Sun. Radiational tides include seasonal and diurnal variations due to varying meteorological forcings. In addition, there are important non-astronomical seasonal variations in sea level due to steric (density) changes in the ocean. The magnitude of such radiational tidal contributions was estimated by Cartwright and Tayler (1971), work which came just before Cartwright’s move to the LTI. Williams et al. (2018) take a fresh look at these quasi-tidal variations and consider how they may be double-counted in storm surge forecasts and also how estimates of Highest Astronomical Tide might be affected.

line 385 - you said: It would be nice, and a cyclical balance here to add: “ By a neat coincidence, these biological drifters were deployed in the same area of the Irish Sea investigated by the Doodson and Proudman summer scientific cruises in the 1930s. Figure 2.”

We haven't added this. It would be a struggle to claim it as the same area. The Proudman cruises were based on the Isle of Man, whereas Cooper et al.'s work was off Angelsey.