Hydrol. Earth Syst. Sci. Discuss., 10, C8115–C8116, 2014
www.hydrol-earth-syst-sci-discuss.net/10/C8115/2014/

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Determining slack tide with a GPS receiver on an anchored buoy" *by* M. Valk et al.

M. Valk et al.

martinvalk15@hotmail.com

Received and published: 5 March 2014

Dear Reviewer 2,

Thank you very much for your detailed reading and the suggestions made to improve our paper. Please find below responses to your remarks.

i. Explain uncertainty of tidal models in a zero flux phase This is hard to explain in absolute terms. But in relative terms one can say that an additional constraint on zero flux (the moment of slack occurrence) will reduce the predictive uncertainty of hydraulic models. Tidal models are generally calibrated on water levels only. The tuning coefficient is essentially the roughness coefficient, which then implicitly incorporates all the errors in the geometry, parametrization, etc.. Calibration only on water levels gener-

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

ally allows some uncertainty, whereby a range of roughness values gives acceptable results, particularly because geometry and schematization is never perfect. Additional calibration on the moment of slack will constrain the range of acceptable parameters much further, leading to a higher reliability of the model.

ii. In page no. 20, the authors say: In this study tidal elevation data from a nearby onshore measurement station in Terneuzen is used to determine the moment of high and low water, under the assumption that the tidal elevation of buoy 18 is equal to that of Terneuzen a. what is distance from the buoy position to on-shore station? and please explain how your assumption is valid.

The distance is less than 1 km. This very short distance implies a very small time difference for high water between the two locations. iii. Explain the technique used to smoothen the buoy velocity This is done with a moving average filter set to 300 seconds.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 10, 13743, 2013.