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Discussions

Interactive comment on "Water level oscillations in Monterey Bay and Harbor" *by* J. Park et al.

Anonymous Referee #1

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Review of Water level oscillations in Monterey Bay and Harbor By J. Park, W. V. Sweet, and R. Heitsenrether MS No.: os-2014-69

This manuscript describes various water level oscillations in the Monterey Harbor, Bight, and Bay. Data are analyzed from several sources including a 60 day high frequency time period as well as a longer multi-year record to assess longer period oscillations. Results demonstrate various modes and the authors correlate these modes to reasonable forcing mechanisms. Not all modes have clear forcings and the paper addresses some possible mechanisms for this. The paper was well organized and the figures clearly presented the data.

In general the paper does provide new insight to an existing set of processes. The paper could be made more readable by having an consistent set of units and by making some of the sections more understandable. A few suggestions are provided for future

research.

1) p5 line 18 reads "... we remove the tidal signal from the 1 Hz water level and deal with the water level nontide.." Perhaps a better wording choice is "... we remove the tidal signal from the 1 Hz water level and analyze the water level nontide.."

2) p 5 lines 24-25 read "Since the magnitude of nontide residual is a measure of the variance of the water level minus tide, " Isnt that the definition noontide? This sentence is a little awkward. Perhaps you could just say that the tidal residual should be strongly correlated with wave height or winds.

3) p 6 lines 1-2: Even though the wave heights and water levels are not observed at exactly the same location, the wave heights that do occur at the water level gage would be expected to be correlated to the wave heights at the CDIP buoy. So one could consider some correlation between CDIP waves and the observed non-tidal water level oscillations.

4) p. 6 lines 14 and rest of paper - I found it a little annoying that the oscillations were discussed in both seconds and then minutes. Some plots had sec and some minutes along the x axis (fig 3 vs 12 for example). Can you make the text and all the figs consistent and use seconds?

5) p 9 tidal phase: What time period was used to assess the significance of tidal phase on the water level NTR oscillations. Looks like this time period may have been during a neap. What is the tidal range compared to water depth at the sensor? What about during a spring tide with a higher-high to lower-low transition?

6) Figure 9 is a little difficult to make out.

7) p. 11 line 16- What is the "Q" factor?

8) Section 6 - can the results from the ROMS model discussed help to assess any other mechanisms for the NTR variations?

9) What water depth is used to compute the wave lengths for the dispersion relations?

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