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Interactive comment on "Autonomous seawater pCO_2 and pH time series from 40 surface buoys and the emergence of anthropogenic trends" *by* Adrienne J. Sutton et al.

Anonymous Referee #2

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Major comment Dr. Sutton and colleagues presented a readily accessible data product of autonomous pCO2 and pH time series from 40 surface buoys from 2004 in open ocean, coastal and coral reef sites, that exhibit extensive daily and interannual variability. Using a time of trend emergence methodology, they estimated the length of time for an anthropogenic trends in oceanic pCO2 and pH to emerge from natural variability in the 40 time series. Only at two time series datasets (WHOTS and Stratus), surface oceanic pCO2 significantly increased. However, pH time series data are too short to estimate long-term anthropogenic trends. In addition, description of pH sensor isn't detailed, compared from pCO2 sensor [Sutton et al., 2014b]. I cannot confirm post-calibrated and quality-controlled pH data (at NCEI data archive) through comparison

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with in-situ calibration, discrete samples and so on, because pH sensor performance was often limited by biofouling [Bresnahan Jr et al., 2014]. After revising the manuscript to address this comment and the specific comments below, I would support publication of the author's submission.

Minor comments Figure 1 I think that only locations and names of 40 fixed moored time series station map is convenient for readers.

Line 22, Page 7 How long is it necessary for pH time series to determine a robust estimate of IAV?

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