

***Interactive comment on* “Seasonal pH and aragonite saturation horizons in the Gulf of Alaska during the North Pacific Survey, 1956–1957” by S. McKinnell and J. R. Christian**

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This was an interesting manuscript with a heroic use of historical pH measurements. Although I think the authors made a valiant effort to try and correct the data, I am concerned that there must be some better way to verify the results. There have been several high-quality cruises in the Gulf of Alaska over the last few decades. Do these data agree with the estimates from these cruises? I am also very skeptical about the saturation state calculations. The pH corrections have very large uncertainties. Put that together with the uncertainties in estimating alkalinity from salinity and I have trouble believing the saturation state estimates. Especially since they suggest under-saturated

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values in surface waters were occurring long before they have been observed anywhere else in the ocean. The GLODAP data, for example, do not show any indication that the surface waters are undersaturated in the Gulf of Alaska. I think these results would be much more believable if the authors could find other existing high-quality data sets in the region with both carbon parameters measured to confirm their results.

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