

Interactive comment on “Coastal upwelling fluxes of O₂, N₂O, and CO₂ assessed from continuous atmospheric observations at Trinidad, California” by T. J. Lueker

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This is a very interesting and potentially very important paper. What is missing from this paper is a comparison with Burke Hales' work. Dr. Hales concluded that the upwelling resulted in a coastal ocean CO₂ sink in this general area. This work shows just the opposite. This issue deserves a serious discussion.

Earlier work of van Green et al. (2000) also suggested that upwelling system is extremely complicated with very high spatial and temporal variations. I think a spatially and temporally integrated work like this one is very important (though we shall aware that this work only represents northern California case). While I trust the direction and magnitude of the CO₂ flux, I am not sure about the reliability of deriving surface pCO₂ using correlation in Fig. 6. Were the data collected during upwelling season, in the center of upwelling area or further offshore area etc? These could result in differences

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in pCO₂.

Refs: 1. B. Hales, L. Bandstra, T. Takahashi, Newsletter of Coastal Ocean Processes (Newsletter issue No. 17, 2003). 2. A. Van Green et al., Deep-Sea Res. II. 47, 975(2000).

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