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# Small-Scale Variations of the Wind-Driven Coastal Sea-Level Response in the West Florida Bight

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### ABSTRACT

Records from a number of temporary tide gage stations spaced an average of 20 km apart near Cedar Key, Florida are used to examine the alongshore pressure gradient over length scales much smaller than before possible. In agreement with previous studies, an alongshore stress of  $1 \text{ dyn cm}^{-2}$  will produce a large-scale (over distances of several hundred kilometers) alongshore sea-level gradient on the order of  $10^{-6}$ , sea level rising downwind. However, cross-shore stress is also important and, at short periods ( $\sim 3.5$  days), can be the more coherent forcing. Estimates of small-scale-level slope do appear to show systematic deviations from the larger scale slope, some of which seem to be related to alongshore variations in nearshore bathymetry.

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