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On Lateral Water Mass Interaction—A Case Study, Bristol Bay, Alaska

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ABSTRACT

Salinity-temperature-depth data obtained on several spring and summer cruises during 1976 and 1977 from outer Bristol Bay in the southeast Bering Sea indicate the existence of a zone, between two well-defined water masses, where details of the interaction process are observable. This interaction zone is approximately 100–150 km wide and is characterized by a plethora of mid-water-column finestructure, in both temperature and salinity, that exhibit a hierarchy of vertical scale sizes. Vertical mixing energy within the zone appears low, which results in persistence of interleaving signatures induced by horizontal interaction of the two adjacent water masses. Such interaction probably occurs between all laterally juxtaposed water masses of nearly the same density; outer Bristol Bay allows enhanced examination of the process because of the broad lateral extent of the transition zone.

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