# Internal tidal bore warm fornts and settlement of invertebrates in central Chile

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**Abstract**

We studied the occurrence of large high frequency temperature fluctuations and their potential association with settlement of intertidal invertebratesduring the spring/summer period 1999/2000 at Las Cruces, on the coast of central Chile. Our results showed the existence of internal tidal bores, characterized by sharp drops in water temperature at the surface and near the bottom, and subsequent temperature increases, which occurred with a semidiurnal periodicity. Measured currents support the hypothesis of alternating onshore and offshore movement of warm-water fronts. The frequency of the events varied through the summer and their amplitude seems to be modulated by onshore winds. The strongest events were observed when strong onshore winds occurred in late afternoon hours and the entire water column showed a semidiurnal temperature signal. Highest values of chlorophyll concentration in the intertidal zone and daily settlement of bivalves, gastropods and crustaceans were observed at times when conditions were favorable for occurrence of internal tidal bores. Results suggest that internal tidal bore warm fronts could play an important role in the transport of neustonic larval invertebrates and the delivery of phytoplanktonto at least some intertidal sites along the coast of Chile.