



## Abstract View

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## A Study of an Intense Density Front in the Eastern Alboran Sea: The Almeria–Oran Front

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### ABSTRACT

Studies of satellite imagery and space shuttle photographs of the western Mediterranean have indicated that the main path of inflowing Atlantic Water is around two large anticyclonic gyres in the Alboran Sea and along the Algerian Coast. These studies have also shown that a strong ocean front is present between Almeria, Spain, and Oran, Algeria, which is part of the easternmost segment of the Eastern Alboran Gyre. Based on these satellite studies, the first in situ investigation of the front, called here the Almeria–Oran Front, was conducted in March 1986 as part of the winter campaign of the Western Mediterranean Circulation Experiment (WMCE). Analyses of the resulting data show that the Almeria–Oran Front is a large-scale density front, formed by the convergence of two distinct water masses and controlled by the geographic position and strength of the Eastern Alboran Gyre. Physical and biochemical data indicate that the front is limited to the upper 300 m, with a strong southward baroclinic jet. The secondary ageostrophic circulation is characterized by surface convergence, along-isopycnal sinking, and upwelling on the western side of the front.

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