



## Abstract View

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# On the Stability of a Fluid with Specialized Density Stratification. Part II: Mixed Baroclinic-Barotropic Instability with Application to the Northeast Pacific

**D.G. Wright**

*Department of Mathematics, University of British Columbia, Vancouver, B.C., Canada V6T 1W5*

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### ABSTRACT

Low-frequency motions ( $\approx 0.25$  cpd) have recently been observed in Juan de Fuca Strait. The three-layer model developed in Part I of this paper is used to show that some of this activity may be due to an instability (baroclinic) of the mean current to low-frequency quasi-geostrophic disturbances.

Satellite infrared imagery and hydrographic maps show eddies in the deep ocean just beyond the continental slope in the northeast Pacific. The eddies are aligned in the north-south direction paralleling the continental slope region and have a wavelength of  $\sim 100$  km. A modification of the three-layer model derived in Part I is used to study the stability of the current system in this area. It is found that for typical vertical and horizontal shears associated with this current system the most unstable waves have properties in agreement with observations.

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