



Abstract View

[Volume 8, Issue 5 \(September 1978\)](#)

Journal of Physical Oceanography

Article: pp. 873–880 | [Abstract](#) | [PDF \(664K\)](#)

Mixing in an Arctic Fjord

R.G. Perkin and L Lewis

Frozen Sea Research Group, Institute of Ocean Sciences, Sidney, British Columbia, V8L 3S2 Canada

(Manuscript received December 28, 1977, in final form May 5, 1978)

DOI: 10.1175/1520-0485(1978)008<0873:MIAAF>2.0.CO;2

ABSTRACT

Measurements made in Cambridge Bay, N.W.T., during the winter show that the breaking of internal waves on the shore influences downward salt transport from the homogeneous surface layer produced by saline convection beneath sea ice during growth. Denser water from the shallows, where the depth of this convective layer is limited by the sea bed, flows down the slope to the layer interface contour where the breaking waves introduce turbulence aiding mixing of the convecting water into the lower layer.

Away from the boundaries entrainment of salt from the lower to the upper mixed layer is aided by the internal waves on the interface. These two salt transports, downward at the boundaries upward over the basin, produce horizontal salinity gradients which overall make water in the shallows less saline than the surface layer of the basin. The energies available for these mixing processes are estimated.

Options:

- [Create Reference](#)
- [Email this Article](#)
- [Add to MyArchive](#)
- [Search AMS Glossary](#)

Search CrossRef for:

- [Articles Citing This Article](#)

Search Google Scholar for:

- [R.G. Perkin](#)
- [L Lewis](#)



amsinfo@ametsoc.org Phone: 617-227-2425 Fax: 617-742-8718
[Allen Press, Inc.](#) assists in the online publication of *AMS* journals.