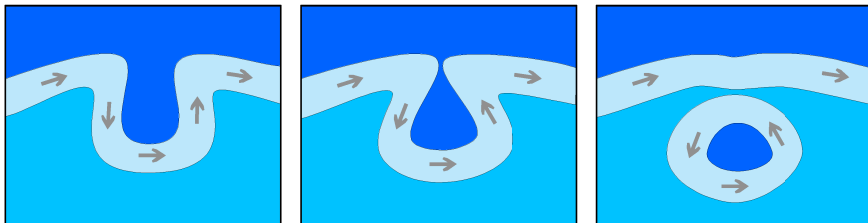


Cold-core rings and warm-core rings

The logic on the left, of how meanders of currents trap pools of surface water, and the logic on the right, of how application of the Ekman spiral concept to eddies results in vertical motion of water, both lead to the same

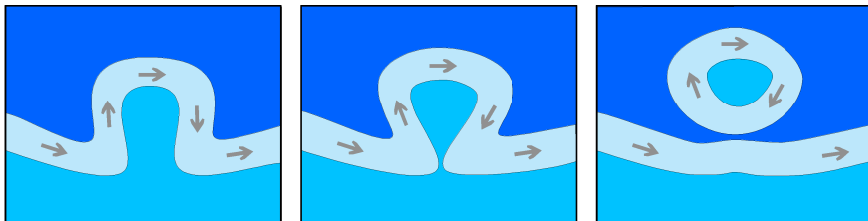
conclusion in the Northern Hemisphere: high-latitude counterclockwise eddies will be cold-core rings, and clockwise eddies will be warm-core rings.

Counterclockwise eddies are cold-core rings:



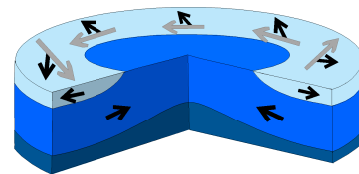
In a westerly higher-latitude current like the Gulf Stream or Kuroshio, a rightward pinchoff creates a counterclockwise eddy with cold surface water trapped in its center: a cold-core ring.

Clockwise eddies are warm-core rings:



In a westerly higher-latitude current like the Gulf Stream or Kuroshio, a leftward pinchoff creates a clockwise eddy with warm surface water trapped in its center: a warm-core ring.

A counterclockwise (cyclonic) eddy moves water away and thus allows deeper (and colder) water to rise, giving a cold core.



A clockwise (anti-cyclonic) eddy moves water inward and thus pools surface (warm) water to give or maintain a warm core.

