

Press Release

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Glider Swarm tracks newborn Eddy

Marine scientists from Kiel and Bremen , for the first time , document the formation of an eddy off the coast of Peru.

22 January 2016/Kiel. Using seven autonomous measuring platforms, so -called ocean gliders, oceanographers from Kiel and Bremen for the first time managed to document the formation of a nearly 100- kilometer wide eddy off the coast of Peru. These eddies are important for the transport of oxygen, nutrients and heat through the oceans. The study, which was conducted in the framework of the Collaborative Research Center (Sonderforschungsbereich, SFB) 754 " Climate – Biogeochemistry Interactions in the Tropical Ocean" has recently been published in the Journal of Geophysical Research – Oceans.

Not only powerful currents, like the Gulfstream, run through the oceans but countless eddies constantly move through the seas. Having diameters of up to 300 kilometers, they can



"The data show in a fascinating way, that the water inside the eddy's core originates from the bottom layers of the continental slope," lead-author Sören Thomsen from GEOMAR describes the main findings of the study. The properties of this water differ greatly from those of waters in the open ocean. "The coastal areas are biologically very productive. As a result, many plants and animals die there, too. They sink to the bottom and are decomposed by bacteria. Of course, these biogeochemical processes affect the characteristics of the bottom waters," says co-author Dr Marcus Dengler from GEOMAR.

The eddy transported the water that it had drawn in from the continental slope, westward to the open Pacific. As almost no exchange occurs between the eddy and the surrounding waters, the differences in the properties persist. "With our study, we show that a large part of the eddy's anomalous properties originate from the region where the eddy is formed," says Dr Dengler.

Since these eddies transport water masses away from the Peruvian continental margin, they simultaneously create space for nutrient-richer water which ascends from the deep. Therefore, they also play a crucial role for the maintenance of high biological productivity of the coast of Peru. "This is highly relevant for the people. After all, fishing is an important economic factor in the region," says Sören Thomsen.

Background information:

The Collaborative Research Center 754 (SFB 754) "Climate and Biogeochemistry Interactions in the Tropical Ocean" was established in January 2008 as a collaboration between the University of