



## NEWS RELEASE:

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## UH Climate Scientist Charts Waters that Could Impact El Nino Strength and Duration

HONOLULU – A study spearheaded by a climate scientist at the University of Hawaii's International Pacific Research Center tracks the formation of a likely precursor of El Niño strength and duration. Using recently deployed Argo floats, the study revealed that the South Pacific subtropical cell, a sparsely charted circulation, contributes significantly more than suspected to the formation of water layers in the equatorial Pacific, where El Niño operates. The American Geophysical Union (AGU) has selected as particularly outstanding the paper, *Subduction of South Pacific Waters*, which describes this work by Tangdong Qu and his colleagues S. Gao, I. Fukumori, R. A. Fine, and E. J. Lindstrom. The AGU, which publishes 19 different scientific journals covering the earth, atmospheric, oceanic and space sciences, has featured the paper in its January Editor's Highlights (<http://www.agu.org/journals/scripts/highlight.php?pid=2007GL032605>) as follows:

### Water Formation in the Southern Pacific Ocean

The strength and duration of an El Niño event are generally thought to depend on changes in subtropical overturning cells (STCs), in which water subducts into the subtropics, flows to the equator, upwells, and returns poleward along the surface. Important mechanisms by which heat and salt are transferred meridionally in the ocean, STCs are well studied in the Pacific Ocean north of the equator. Noting the paucity of data in the southern Pacific Ocean, Qu et al. (2008) analyzed data collected from the recent deployments of the Argo observation system, a worldwide network of small, drifting oceanic probes. Through high-resolution conductivity-temperature-depth profiles, the authors calculated the rate at which water sinks in the southern Pacific Ocean. Further analyses showed that the southern STCs contribute more significantly than previously recognized to the formation of water layers in the equatorial Pacific. The authors expect that future study of South Pacific STCs will reveal the degree to which eddies and larger oceanic vortices strengthen or weaken STC cycles, and how such strengthening or weakening influences El Niño events.

Citation: Qu, T., S. Gao, I. Fukumori, R. A. Fine, and E. J. Lindstrom (2008), Subduction of South Pacific waters, *Geophys. Res. Lett.*, **35**, L02610, doi:10.1029/2007GL032605.

**The International Pacific Research Center (IPRC)** of the School of Ocean and Earth Science and Technology (SOEST) at the University of Hawai'i at Mānoa, is a climate research center founded to gain greater understanding of the climate system and the nature and causes of climate variation in the Asian-Pacific region, and to develop information on how global climate changes may affect the region. Established under the "U.S.-Japan Common Agenda for Cooperation in Global Perspective" in October 1997, the IPRC is a collaborative effort between Japan and the United States.

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