

2004 Ocean Sciences Meeting  
**Search Results**

Cite abstracts as *Eos Trans. AGU*, 84(52),  
Ocean Sci. Meet. Suppl., Abstract xxxxx-xx, 2003

Your query was:  
**ecco**

---

-----

HR: 09:30h  
AN: **OS41N-05**  
TI: **Estimates of Eddy-Driven Subduction in the Eastern North Atlantic Ocean**  
AU: \* **Gebbie, G**  
EM: *gebbie@mit.edu*  
AF: *Massachusetts Institute of Technology, Room 54-1419 77 Massachusetts Ave., Cambridge, MA 02139*  
AU: **Wunsch, C**  
EM: *cwunsch@pond.mit.edu*  
AF: *Massachusetts Institute of Technology, Room 54-1419 77 Massachusetts Ave., Cambridge, MA 02139*  
AU: **Heimbach, P**  
EM: *heimbach@mit.edu*  
AF: *Massachusetts Institute of Technology, Room 54-1419 77 Massachusetts Ave., Cambridge, MA 02139*  
AB: Although eddy-driven subduction is acknowledged to transport and transform large volumes of fluid in the Gulf Stream region, relatively little is known about its importance in the eastern half of the subtropical gyre. A new information source for the eastern North Atlantic Ocean is an eddy-resolving state estimate of the ocean circulation. The state estimate is a synthesis of observations from the Subduction Experiment and TOPEX/POSEIDON altimetry, and the MIT General Circulation Model. The state estimate is ideal for this study because it is dynamically consistent and it explicitly resolves eddy-scale motions. Kinematic and thermodynamic estimates of eddy-driven subduction for the Azores Current are larger than previously estimated by parameterizations in coarse resolution models. Furthermore, eddy-driven subduction rates are approximately 15 percent of mean subduction rates. The inability to resolve or accurately parameterize eddy-driven subduction in climate models would lead to an accumulation of error in the structure of the main thermocline, even in the eastern subtropical gyre. This work is part of the ECCO Consortium effort directed at greatly improved estimates of the oceanic general circulation through state estimation methods.  
DE: 4528 Fronts and jets  
DE: 4532 General circulation  
DE: 4536 Hydrography  
DE: 4572 Upper ocean processes  
SC: OS  
MN: 2004 Ocean Sciences Meeting

---

[New Search](#)

