

Technical Announcement

MMS

U. S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region

Date: January, 2010

Contact: Caryl Fagot
(504) 736-2590

Observation of the Deepwater Manifestation of the Loop Current and Loop Current Rings in the Eastern Gulf of Mexico

OCS Study MMS 2009-050

The Minerals Management Service (MMS), Gulf of Mexico OCS Region, announces the availability of a new study report, *Observation of the Deepwater Manifestation of the Loop Current and Loop Current Rings in the Eastern Gulf of Mexico*.

This study examined the circulation in the Eastern Gulf of Mexico (GOM) using a single deepwater mooring located at 25.5°N and 87°W in water depths of over 3,500 m (11,480 ft). The objectives of this study were to improve our understanding of the interface between the upper and lower layers and the variability of watermass characteristics in deep water. Starting from the mooring configuration used in a previous study, additional current measurements were made between 700 and 1,200 m (2,297 and 3,937 ft) in order to catch the interface between the upper and lower layers. Additional temperature and salinity sensors were deployed between 145 and 3,300 m (476 and 10,827 ft). The deployments extended from May 29, 2005, to July 10, 2007. Major findings include the following: (1) Loop Current (LC) and LC eddies (LCE) drive deepwater currents in the Eastern GOM; and (2) an anticyclone-cyclone pair forms underneath the LC when the LC makes a northward extension prior to the formation of an LCE. A mechanism to transmit significant energy to deep water in the GOM is the barotropic oceanic response to the elevated sea surface near the center of tropical and extra-tropical storms often observed in the GOM.

This report is available only in compact disc format from the Minerals Management Service, Gulf of Mexico OCS Region, at a charge of \$15.00, by referencing OCS Study MMS 2009-050. The report may be downloaded from the MMS website through the [Environmental Studies Program Information System \(ESPIS\)](#). You will be able to obtain this report also from the National Technical Information Service in the near future. Here are the addresses. You may also inspect copies at selected Federal Depository Libraries.

Minerals Management Service
Gulf of Mexico OCS Region
Public Information Office (MS 5034)
1201 Elmwood Park Boulevard

U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

New Orleans, Louisiana 70123-2394
Telephone requests may be placed at
(504) 736-2519, 1-800-200-GULF, or
Rush Orders: 1-800-553-6847
Fax: (504) 736-2620

Phone: (703) 605-6040
Fax: (703) 605-6900
Email: bookstore@ntis.gov

MMS Main Website: www.mms.gov
Gulf of Mexico Website: www.gomr.mms.gov