Supplementary Information

Mesoscale eddies transport deep-sea sediments

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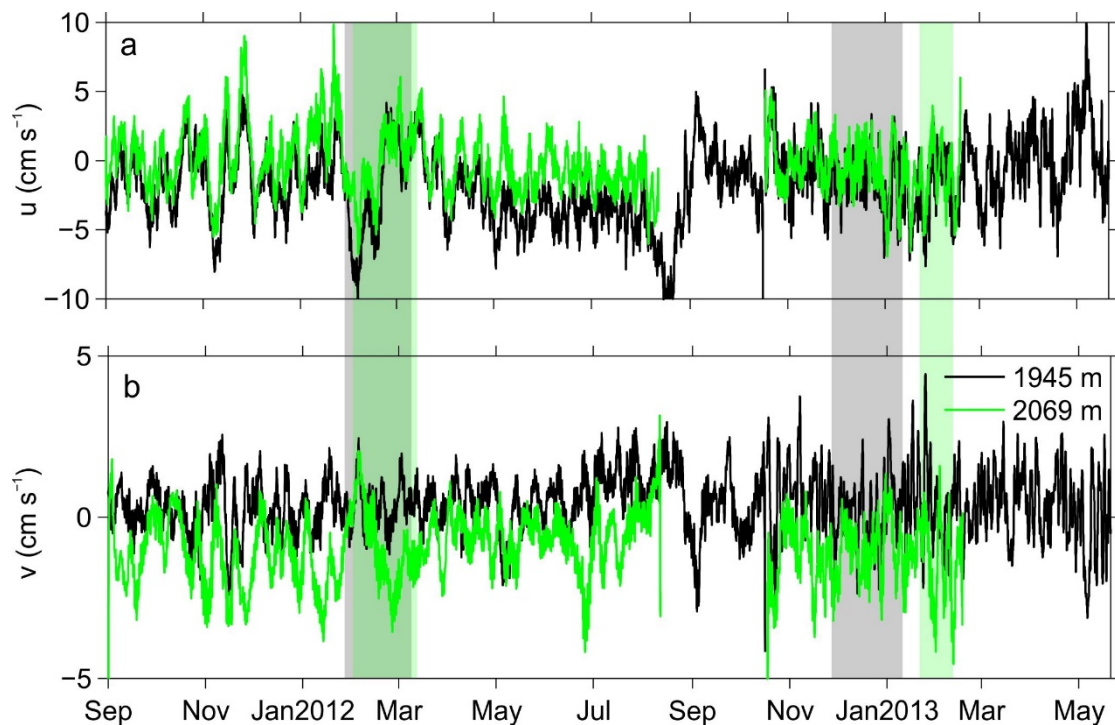
1. Supplementary figures and legends

Figure S1. Time series current velocities at different depths from September 2011 to May 2013. (a) Along-slope velocities (u) at 1945 m water depth recorded by ADCP-LR75 (black, positioned at 1637 m) and at 2069 m water depth recorded by a RCM

(green). Two gaps of velocities from RCM results from the battery shortage. (b) Same as (a) but for cross-slope velocities (v). Shaded regions show the periods when two anticyclonic eddies passed through the mooring site (gray) and the periods with enhanced SSC near the seafloor (green) following the eddy activities.
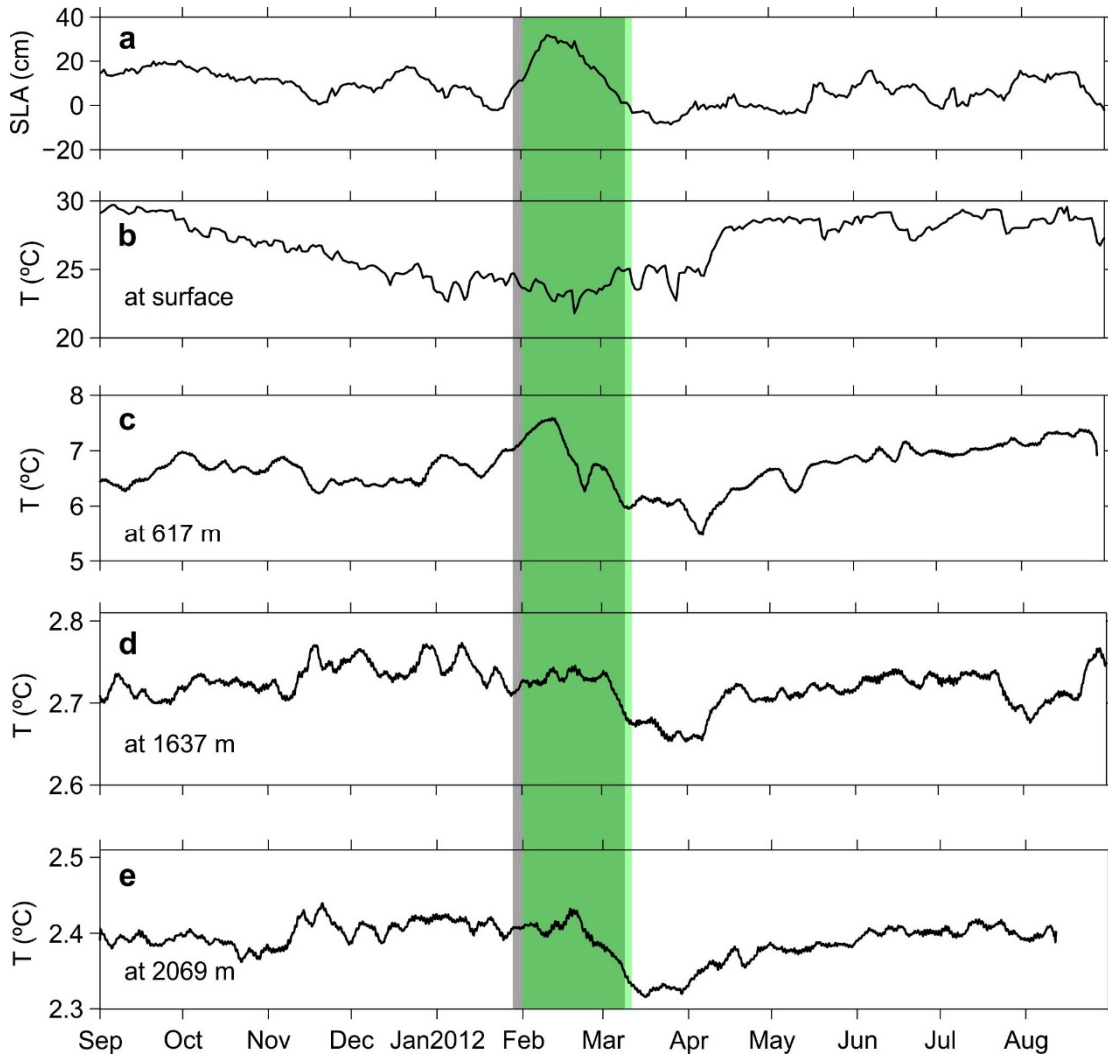

Figure S2. Full-water column temperature variations accompanied with the first anticyclonic eddy from January to March 2012. (a) Sea level anomaly (SLA). (b) Temperature at sea surface obtained by the Advanced Very High Resolution Radiometer (AVHRR). (c) Temperature at 617 m obtained by the upper RCM. (d) Temperature at 1637 m obtained by ADCP-LR75. (e) Temperature at 2069 m obtained by the lower RCM. Shaded regions are same as in Supplementary Figure S1.
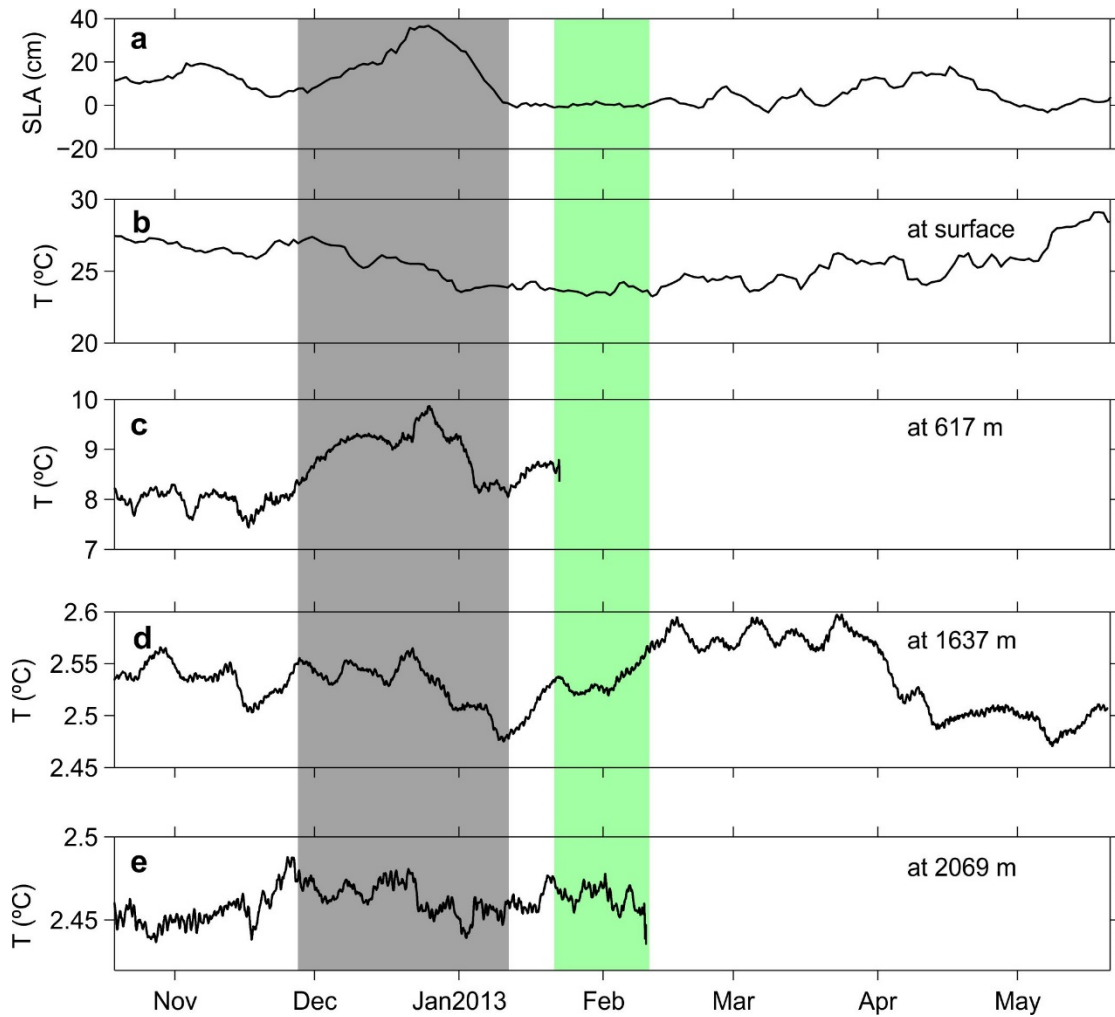
Figure S3. Full-water column temperature variations accompanied with the second anticyclonic eddy from November 2012 to January 2013. (a) Sea level anomaly (SLA). (b) Temperature at sea surface obtained by the AVHRR. (c) Temperature at 617 m obtained by the upper RCM. (d) Temperature at 1637 m obtained by ADCP-LR75. (e) Temperature at 2069 m obtained by the lower RCM. Shaded regions are same as in Supplementary Figure S1.

2. Supplementary movie legends

Movie S1. Daily variations of the SLA and surface geostrophic current velocity during the track of the first anticyclonic and cyclonic eddy pair. The time period of SLA shown in the movie is from 1 December 2011 to 29 March 2012. The black star shows the location of the mooring site. This movie is created through combining SLA and

surface geostrophic current velocity data distributed by AVISO
(http://www.aviso.oceanobs.com) using Matlab R2010b.

Movie S2. Daily variations of the SLA and surface geostrophic current velocity during
the track of the second anticyclonic eddy. The time period of SLA shown in the movie
is from 6 November 2012 to 28 February 2013. The black star shows the location of
the mooring site. This movie is created through combining SLA and surface
geostrophic current velocity data distributed by AVISO
(http://www.aviso.oceanobs.com) using Matlab R2010b.