

eMOLT

Spring 2008 Update

Today's Package includes...

You should find a logsheet enclosed which lists your contact info, site info, and probe serial number(s). If any of the information (such as your email address) is wrong, please let me know. If a probe was not enclosed with this package, we are assuming you already have a probe for your 2008 deployment. If you ever find yourself fishing without a probe in the water, please let me know immediately at 508-495-2211 or email james.manning@noaa.gov. We ask that you keep the probes in the water as long as possible and mail them (using the enclosed self-addressed envelope) at the end of the year. I will send you a reminder and another envelope near the end of the year.

Annual calibration check

As we have done several times in the past, we exposed a collection of probes to a controlled ice-bath and checked for any obvious bias. While the manufacturers typically claim accuracies of 0.2 degC, we nevertheless verify that all probes are performing to specifications. Only two probes were rejected in this process over the eight years we have been doing it. One probe out of 96 units tested this year was obviously biased low. It was a LOTEK unit. All the VEMCO Miniloggs and the ONSET TidBits performed well.

Cigar-shaped probes have 341 day memory limit

The cigar-shaped "Minilog" probe that most of you are now using has a memory limited to 341 days. So, keep in mind that they will not record a full year of data before they need to be downloaded and reinitialized.

Probes have a 4-5 year battery limit

Both the disc-shaped TidBit probe and the cigar-shaped Minilog probes have about 4-5

year battery limit. Given our limited budget, we attempt to get everything we can from each probe. So, keep in mind that there is some chance that probes will fail mid-deployment. If you notice that your probe is no longer blinking or, in the case of the TidBit probes, are blinking red, please let me know so that I can send you a new probe. TidBit probes with serial numbers starting with 44 or 45 are on their last legs.

Site Codes

As I have reminded all participants over and over again, it is very important that the position and depth of each temperature series are well documented and every attempt is made to relocate the probe in the same location(s) year after year. Many of you have consistently deployed the probe in the same location each time but since I have been listing positions in latitude/longitudes and many of you use lorans, there is often some confusion about where your standard eMOLT sites are located. Please toggle your navigation system while on station to make sure the lat/lon listed on the enclosed logsheet make sense. Also, please be conscious of the fact that each of your sites has a particular "site code". It is usually (but not always) your initials followed by a 2-digit number.

Realtime Temperature Update

In the spring of 2007, I reported that we had successfully transmitted data wirelessly from the deck to the wheelhouse. In the Fall of 2007, we successfully transmitted at least one data point through a satellite system. While the progress is very slow, we hope to put the whole system to the test in 2008. The engineering firm we were working with originally has disbanded so we were forced to seek out other engineers to continue the development. We will not give up on this project.

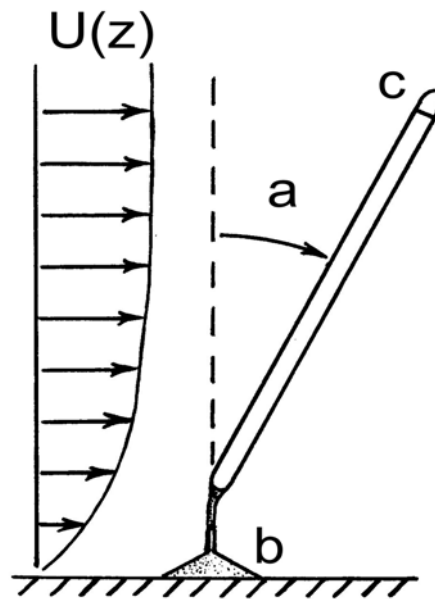
Drifter plans for 2008

Drifter deployments (to document flow patterns around the Gulf of Maine) will be

made Feb though Sep 2008. Again this year, more than 50 units have been funded by various institutions. A new batch of students at the Southern Maine Community College is hard at work in constructing these. If you come across any drifters underway, please give me a call (my number will be posted on the PVC pipes). We want to thank several fishermen who helped recover drifters in 2007 so that we could redeploy them again in 2008. You can view the progress of these units along the coast at: <http://www.nefsc.noaa.gov/drifter> . Several units deployed off Jonesport Maine in late February are approaching Georges Bank.

eMOLT Phase VI: bottom currents

We are in the process of developing a very inexpensive bottom current meter. After successful tests of some prototypes off the dock in Woods Hole and comparing the results to observations by the more expensive commercial current meters this past winter, we submitted proposals to both the Northeast Consortium and the National Science Foundation asking to fund an extensive array of these new low-cost units all along the coast. The NEC grant has been accepted and we are still waiting to hear from NSF. Our motivation here is to document the spatial/temporal variability of bottom currents in order to a) help with both the “floating” line and toxic cysts (ie red tide) resuspension issues and b) provide numerical modelers with real data to validate simulations.



In the figure above, the velocity profile $U(z)$ causes the device to tilt (a) from the vertical direction. The device is attached to the base (b) resting on the bottom. The electronics package which is nothing more than an internally-recording 3-axis inclinometer is located at the top of the device (c). A digital compass is planned for the base.