Ocean Sci. Discuss., 3, S187–S190, 2006
www.ocean-sci-discuss.net/3/S187/2006/
© Author(s) 2006. This work is licensed
under a Creative Commons License.

Ocean Science Discussions

Interactive comment on "Transformation of Levantine Intermediate Water tracked by MedArgo floats in Western Mediterranean" *by* M. Emelianov et al.

M. Emelianov et al.

Received and published: 17 July 2006

Dear Dr. Gould, First of all we would like to thank you for the positive review of our paper, very important comments, and English improvements. We totally agree with you that sensors drift could dramatically affect the clustering results, especially in the case of small searching radius. The CTD data from MedArgo floats are real time data (data mode is "R") with ARGO real time quality control. Delayed mode process has not yet been done at Coriolis, as we have checked after receiving your comments. Following your recommendations we estimated possible drifts of the conductivity sensors. The average working period for the floats we have analysed is 6 months +/- 4 months. We examined all deep profiles (until 2000 db) from the floats that worked more than 6 months and calculated the difference between the first deep profile and all consecu-

tive deep profiles in the deepest layer of the cast (1450-2000 db). The results of this analysis are presented in table 1.

Table.1. Salinity differences between deep profiles.

1stFloat#/Cast#	1stDate	Next Float#/Cast#	NextDate	DS (psu)	Remarks
PROVOR293/2	09/09/2004	PROVOR293/12	29/10/2004	-0.0043	
PROVOR293/2	09/09/2004	PROVOR293/22	18/12/2004	-0.0057	
PROVOR293/2	09/09/2004	PROVOR293/32	06/02/2005	-0.0058	
PROVOR293/2	09/09/2004	PROVOR293/42	28/03/2005	-0.0033	
PROVOR293/2	09/09/2004	PROVOR293/62	06/07/2005	-0.0027	
PROVOR293/2	09/09/2004	PROVOR293/70*	25/08/2005	-0.0058	*Different waters
PROVOR293/2	09/09/2004	PROVOR293/80	14/10/2005	-0.0005	
PROVOR293/2	09/09/2004	PROVOR293/90	03/12/2005	0.0005	
PROVOR293/2	09/09/2004	PROVOR293/99	22/01/2006	0.0015	
APEX281/1	20/08/2004	APEX281/11	09/10/2004	0.0002	
APEX281/1	20/08/2004	APEX281/20	20/11/2004	-0.0023	
APEX281/1	20/08/2004	APEX281/29	17/01/2005	0.0016	
APEX280/41	28/04/2005	APEX280/49	17/07/2005	-0.0010	
APEX280/41	28/04/2005	APEX280/57	06/08/2005	-0.0003	
PROVOR292/2	09/09/2004	PROVOR292/11	30/10/2004	-0.0025	
PROVOR292/2	09/09/2004	PROVOR292/20	19/12/2004	-0.0074	
PROVOR292/2	09/09/2004	PROVOR292/29	07/02/2005	-0.0072	

PROVOR292/2 09/09/2004 PROVOR292/58 07/06/2005 -0.0063

PROVOR292/2 09/09/2004 PROVOR292/68* 26/08/2005 -0.0050 *Different waters

PROVOR292/2 09/09/2004 PROVOR292/77* 15/10/2005 -0.0132 *Different waters

PROVOR292/2 09/09/2004 PROVOR292/97* 23/01/2006 -0.0187 *Different waters

PROVOR291/1 09/09/2004 PROVOR291/11 29/10/2004 -0.0015

PROVOR291/1 09/09/2004 PROVOR291/21 18/12/2004 -0.0014

PROVOR291/1 09/09/2004 PROVOR291/30 06/02/2005 -0.0005

PROVOR291/1 09/09/2004 PROVOR291/49 17/05/2005 0.0031

PROVOR291/1 09/09/2004 PROVOR291/57* 06/07/2005 -0.0011 *Different water

PROVOR291/1 09/09/2004 PROVOR291/67 25/08/2004 -0.0003

APEX279/1 05/07/2004 APEX279/11 24/08/2004 -0.0048

APEX279/1 05/07/2004 APEX279/21 13/10/2004 0.0008

APEX279/1 05/07/2004 APEX279/31 02/12/2004 -0.0079

APEX279/1 05/07/2004 APEX279/41 01/01/2005 0.0003

APEX279/1 05/07/2004 APEX279/51* 12/03/2005 -0.0188 *Different water

APEX279/1 05/07/2004 APEX279/60* 01/05/2005 -0.0163 *Different water

APEX282/1 20/08/2004 APEX282/11 09/10/2004 -0.0006

APEX282/1 20/08/2004 APEX282/20 28/11/2004 -0.0025

APEX282/1 20/08/2004 APEX282/30 08/03/2005 -0.0006

APEX282/1 20/08/2004 APEX282/38 27/04/2005 0.0040

APEX282/1 20/08/2004 APEX282/45 16/06/2005 -0.0065

OSD

3, S187–S190, 2006

Interactive Comment

APEX282/1 20/08/2004 APEX282/52* 05/08/2005 0.0076 *Different water

APEX278/1 05/07/2004 APEX278/10 24/08/2004 -0.0028

APEX278/1 05/07/2004 APEX278/46* 12/03/2005 0.0040 *Different water

APEX278/1 05/07/2004 APEX278/55* 01/05/2005 0.0070 *Different water

PROVOR556/22 03/07/2005 PROVOR556/32 28/08/2005 -0.0013

PROVOR556/22 03/07/2005 PROVOR556/62 19/01/2006 0.0025

According to table 1 we did not encounter any systematical changes in salinity values that could be interpreted as a drift. The magnitude of the differences is of order of 10-3 and increases with changes in deep water mass, while is lower inside the same water mass. These salinity differences do not affect our clustering because the searching radius is one order bigger (0.0125 psu). In case of subclustering the searching radius is 0.00625 psu and we are close to the obtained salinity differences. But the clustering tool analysed the salinity profile together with the temperature one (subclustering searching radius is 0.025žC). Thus a possible drift in salinity data will be “neutralized” with the temperature, in the sense that if there was not a significant drift in T (and this is not the case) the profiles would not be erroneously attributed to a different subcluster. They would create instead a new subcluster, shifted in salinity but not in temperature. We can conclude that the real time quality controlled MedArgo data are good enough to be used in our clustering analysis.

Interactive comment on Ocean Sci. Discuss., 3, 569, 2006.