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Interactive comment on "Characterisation and quantification of regional diurnal SST cycles from SEVIRI" *by* I. Karagali and J. L. Høyer

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GENERAL COMMENTS This manuscript is focused on characterization the regional diurnal warming distribution on the SEVIRI disc in the period 2006 to 2012. The questions that this paper aims to answer make sense and deserve the investigative effort made by the authors.

The first half of the paper is devoted to the validation of SEVIRI against ATSR and on the validation of the test foundation fields after their definition. Then the second, and more interesting, part describes and comments the spatial and temporal variability of the DW over the area observed by SEVIRI giving an interesting and exhaustive picture of the DW phenomenon in the area sensed by SEVIRI. Very interesting, even if only mentioned in the conclusion, is the relation between ocean color and surface

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water warming: "…. Thus, it is postulated that the very highwater turbidity, verified by composite maps from the GlobColour project (Morel et al., 2007), reduces the incoming solar radiation's penetration depth in the water column thus strengthening the top layer warming…". This subject has already been discussed in Karagali et al. 2012 for the North Sea and merits to be further investigated (may be in a future paper) at global scale. The future work section at the end of the conclusions should include this subject.

In conclusion, I would recommend publication of the manuscript provided revisions are made to address the above specific (very minor) comments below.

SPECIFIC COMMENTS

Section 2.2, page 1097, line 9: …uncertainty lower than 0.8. Can the authors add a comment about this 0.8?

Section 3.2: The TFF definition: The moving window in table 1 is always 00:00-04:00 except for TFF5. I do not understand in which sense the window is "moving". Moreover, quality flags considered are: 1,2,3,4,5 – 3,4,5 and 5, why 4,5 is not included?

Section 4.1, page 1099, line 11: the most significant decrease is observed going from QF 3 to QF 4. QF 4 and QF 5 are both very close to zero (between 3 and 6 time closer than QF 3). A similar difference is observed for sigma. This observation would support the use of qf4 and 5 rather than 3,4,5.

Section 4.1: Which QF is used for comparison with the drifters?

Section 4.2, page 1102, line 8-9: "….but absent from the drifter measurements which are taken from a reference depth of 20 cm" This sentence is quite obscure.

Section 4.3, page 1104, line 20: "given the biases and the standard deviation ……. 1 K or more is used". What is the rule that produces 1K? It is just a bit more than the standard deviation or some statistical theorem must be invoked?

Section 4.3, page 1106, line 3: ok for the vertical stripes but what about the small

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squares effect present in most of the maps?

Interactive comment on Ocean Sci. Discuss., 11, 1093, 2014.