

## MS No.: os-2015-85

Review of the research article titled: Research Priorities in Support of Ocean Monitoring and Forecasting at the Met Office by J. R. Siddorn, S. A. Good, C. M. Harris, H. W. Lewis, J. Maksymczuk, M. J. Martin, and A. Saulter submitted to the OS Special Issue: Operational oceanography in Europe 2014 in support of blue and green growth.

### General remarks.

The paper addresses relevant scientific questions and priorities within the scope of this OS special issue that focuses on Operational oceanography in Europe 2014 in support of blue and green growth. In doing so it provides an overview of the present ocean monitoring and prediction systems at the Met Office in UK. This is subsequently followed by a review of the main scientific priorities that will take the systems forward in a user focused way. The title clearly reflects the contents of the paper and the abstract provides a concise and complete summary. The paper is descriptive in nature. It is well clear with a fluent and precise language. My specific comments are annotated below.

### Specific comments.

Section 2 presents the monitoring and prediction systems in operation at the UK Met Office. This provides a useful overview. It would help if the essence of this section were summed up in a table. The heading of section 2.3 should also be spelled out, e.g. Operational Sea Surface Temperature and Sea Ice Analyses (OSTIA).

In section 3 the heading could be modified to "Science Challenges and Priorities" to better signal the content of the section.

Page 8, lines 10-18: Here I miss a clear reference to Argo profiling floats both with respect to validation and quality control as well as data assimilation.

Page 8, lines 28-29: Here it is stated that waves from scatterometers have similar..... This is slightly confusing and misleading. The scatterometer derived vector wind field is used to drive the wave models, whereas the wave spectra are observed from Synthetic Aperture Radar (SAR) observations while the Significant wave height is derived from altimetry. Please be more clear on this matter.

Page 9, line 5: .....by intellectual property rights.....

Page 9, line 29:.....increasing the range of...

Section 3.2 on Page 10, lines 23-31 and Page 11, lines 1-10: addressed the coupled modeling whereas section 3.5 addresses coupled prediction. This could preferably be combined under the latter section.

In general Section 3.2 Ocean modeling could also have been broken into some sort of subheadings (numbered or not) such as Vertical Mixing;

Advection/Diffusion schemes; Parameterization; Shelf Seas modeling; Biogeochemistry.

Page 13, line 3: ....present a number of challenges.....

Page 16, line 14. The sentence should end with . and not ,

Page 24, line 15: Ocean services in support of blue and green growth are available.....This statement regarding blue and green growth comes in the conclusion for the first time. Should be qualified further and also perhaps addressed in the introduction. For consistency the summary should also reflect on the Marine Strategy Framework Directive (MSFD) that is mentioned in the introduction.

#### References

Hasselmann et al is listed on Page 29, line 5. However, I could not find it in the text. Please make a thorough check on the references to avoid such situations with references not cited in the text.