

## **Interactive Referee Comment on “Organic carbon densities and accumulation rates in surface sediments of the North Sea and Skagerrak”**

### **1. General Comments**

The authors have responded fully and with great clarity to all previous review comments. I would like to thank the authors for engaging so thoroughly. The predictions (and associated uncertainties) for OCAR and sedimentation rates will provide a very useful resource for carbon cycling and budget studies. The study highlights the important role of the Norwegian trough in accumulating and storing disproportionate amounts of OC relative to area within its sediments and clearly stands out from the North Sea areas investigated in this regard. The uncertainty estimates will provide a focus for further sampling and research efforts to plug gaps where they exist. The authors pose some interesting questions regarding zoning according to C processing and ideas for further work, including the need for a comprehensive and coordinated sampling and data collection effort to improve sedimentary carbon research. The figures are well presented and the R Markdown script a very useful output.

### **2. Specific Comments**

No outstanding issues.

### **3. Technical Corrections**

Minor editing suggestions as follows:

Line 8 - Suggest re-wording; Sediments don't “protect the seabed” from disturbance (I believe the authors had planned to change this previously from their response).

Line 141 – OC “content” rather than concentration if reported as weight %.

Line 315 – Suggest “as follows” instead of “in the following”?

Line 322 - 326 – Could the authors make clearer within the text that the marine stocks calculated for the different countries are lower because they only partially cover the full extent of the EEZs? Maybe this could be done by somehow merging lines 322 and 325? E.g. only 0.5% of France's EEZ falls within the extent of this study. Or perhaps, this could just be made clearer in Table 2: Caption – e.g. “Topsoil OC stocks refer to the entire area of the respective country bordering on the North Sea and Skagerrak while marine OC stocks refer to the proportion of the EEZ that falls within our study area”?

Figure 1A – Could the authors briefly explain the choice of numeric and colour scale for the Folk classes? For instance, what is the relevance of ‘20’ and ‘110’ having the same colour?