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Ocean Science Discussions

Interactive comment on "Changes in detrital sediment supply to the central Yellow Sea since the Last Glacial Maximum" *by* Hyo Jin Koo and Hyen Goo Cho

Anonymous Referee #3

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1. General comments: This manuscript discussed the sediment provenance of Central Yellow Sea mud (CYSM) and their controlling factors based on the analysis of clay mineral composition, rare earth elements and radiogenic Nd isotope of core 11 YS-PCL14 in the Yellow Sea. This manuscript present some new evidences to trace the sediment provenance of the mud deposition in the middle Yellow Sea since late deglaciation. It is helpful to better understand the variation of sediment supply to this area and the formation history of the mud deposition in the Yellow Sea. However, some key parts of the manuscript are not clearly displayed or described. There are some inconsistence in the manuscript. The language should be polished further because some expression are hard to understand. Therefore, I suggest that this manuscript should be major revised

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before it can be accepted.

2. Specific comments: (1)The time period in the title need to be revised. The core records the sedimentary history for the last 15.5ka (from the last deglaciation to present). The whole text of the manuscript also use the last delgaciation, why the title use the Last Glacial Maximum? (2)The core name is different in the manuscript. Two different names are used in the manuscript, e.g. 11YS-PCL14 and PCL14. Although this research use the same core sediemnt as Badejo et al. (2016), the core name is different from Badejo's paper. (3)In the abstract, the meaning of this sentence is not clear. "The late last deglaciation (Units 3 and 4) sediments originated from all potential provenance rivers, while the source of coarse sediments changed to Huanghe in Unit 3". What does all the potential provenance rivers mean? Which rivers are not clear here and should be indicated. The authors argue that the late last deglaciation (Units 3 and 4) sediments originated from all potential provenance rivers, here, sediments indicate fine sediments or not? If the answer is no, then it is contradict with the following sentence: "while the source of coarse sediments changed to Huanghe in Unit 3." (4)The age boundary of unit 3 and unit 2 are inconsistent in the manuscript. In some parts (e.g. Abstract, Discussion, Conclusion and Fig.7), the boundary is 12.1ka, in other parts, it is 12.8ka, which one is correct? (5)The last sentence in the abstract is hard to understand. "Possible transport mechanisms in the riverine sediment sources change and contributions to this include position shifts of river mouths, tidal stress evolution, and the development of the Yellow Sea Warm Current and coastal circulation systems". (6) Lines 50-52: this sentence is hard to understand. "Particularly, paleoriver pathway associated with sea-level change that was recently reconstructed using highresolution seismic data in the Yellow Sea can be explained reasonable for understanding CYSM formation during low stand period (KIGAM, 1993; Xu et al., 1997; Yoo et al., 2015, 2016)." (7) Figure 1 have some errors. The boundarie lines between different countries are missing. Some locations are missing, for example, Cheju Island and Tsushima Strait etc. (8) Biogenic carbonate is a major component in the marginal sea sediments, it may significantly influence the grain size, and Sr-Nd isotopic compo-

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sitions. However, the authors didn't clearly describe what kind of samples are use to be analyzed, bulk sediments or siliclasitic fractions. In addition, the content of biogenic carbonate composition of the core should be displayed. (9) Line 80: The clay mineral analysis for was conducted.... "for" should be deleted. (10) The discussion part are poorly written. There are some mistakes, especiall in the provenance parts, I list some of them as follows: Line 172, "while Chinese rivers have abundant MREE (middle REE) and εNd (Table 3, Fig. 6)". This description is not accurate. Abundant cannot be used to describe εNd. LINE 173, "In these plots, the REE values represented the source of both coarse and fine sediments because the analysis was performed with coarse grains." This sentence is very hard to understand. Line 174-175: Unit 1 is generally close to the Changjiang with slightly influence of the Korean rivers, as well as the clay mineralogy(Fig.4 and 6). This sentence is very confused. In addition, the author didn't mention the influence of Korea Rivers on the sediment of UNIT1 in the former discussion. It is contradict with this discussion. Line177: "the clay-sized particles of Unit 2" are not correct. Clay-sized paritcles indicate <4 μm particles. However, the autohr only analysis the provenance of clay minerals (finer than 2μm). Actually, the authors use clay-sized particles to represent clay minerals in the manuscript for many times, which should be revised. Lines 185-186: These sentences: "Unit 3 sediments in this plot are certainly plotted close to the Huanghe. This is caused by the many silt fractions in Unit 3 and probably represents a relatively close supply from the Huanghe." is hard to understand, and it is hard to demonstrate the contribution of silt fractions from Huanghe increase. Lines 188-189: However, in Unit 3,silt-sized fractions were predominantly affected by the Huanghe. This conclusion is lack of evidence to support. Line 213: The authors write "while silt-sized particles were supplied only from the Huanghe (Fig. 5)", but I cannot get this information from Figure 5.

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