

## ***Interactive comment on “Variations in the characteristics of Changjiang sediment discharging into the sea due to human activities” by J. H. Gao et al.***

**Anonymous Referee #2**

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Manuscript summary:

In this paper, the authors present a study on the change in sediment load and sediment grain size over time in the Changjiang river basin. The study uses long-term datasets (1956-2010) of annual sediment load and grain size to determine when and where there were changes in sediment load at each sampling station along the tributary rivers and main stem. Changing sediment supply to coastal ecosystems is an important topic in an area where there are many anthropogenic pressures (i.e. dams) on watersheds. These impacts are felt throughout the watershed and near-shore environment, but timing of these changes can be different depending on the watershed

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and type of disturbance. Therefore, this paper addresses an important subject in global change.

General comments:

Overall, this paper is hard to understand and confusing. The introduction seems to introduce a paper that is different than what is presented in the methods and results, creating a narrative that does not fit their data. The introduction mentions a variety of sediment characteristics, but as far as I can tell the paper only includes information about load and grain size. The introduction also does not state any hypotheses or predicted trends, which makes it hard to understand the methods and their rationale.

The major issue with the methods is that they do not address much of the analysis that they report in the results and the discussion. For example, how was cumulative reservoir storage capacity determined? (see Specific Comments in Supplementary material for other examples). Perhaps most importantly, it is not at all clear how the authors attributed changes in sediment flux to the various tributaries. Was this based on mass flux data? How were the sediment grain sizes used to do this (as I assume that they were)? The methods fail to explain how they came to the numbers used in the analyses and tracing of sources of sediment in the river basin presented in the results and discussion (see Specific Comments in Supplementary material for examples). Finally, the results and discussion bring up topics not discussed or detailed earlier in the paper, making the narrative confusing. There needs to be a complete reworking of the narrative (in both the introduction and discussion) and the methods section of this paper in order to fully capitalize on the potential of the long term datasets used in this manuscript.

Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/11/C3755/2014/hessd-11-C3755-2014-supplement.pdf>

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