

## ***Interactive comment on “Morphology of Tigris River within Baghdad City” by A. A. Ali et al.***

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Review of ‘Morphology of Tigris River within Baghdad City’

This paper presents new facts and figures that are rarely presented for this area of the world. It is synthetic and has a good structure, presenting the main characteristics of the river, in order to determine the changes in horizontal and vertical river morphology, focusing on the ones induced by human activity.

The paper in its present form, however, is more in the form of a semi-quantitative technical report than of a scientific paper and is lacking a robust description of data and methods used as well as a robust discussion and conclusion. The paper would improve a lot if newer more accurate figures would be presented. In its present form the paper does not bring a new scientific progress in the discipline of river morphology analysis (it

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uses standard methods for modeling and is not rigorous in presenting the data used), nevertheless, presenting data from a neglected part of the world would be of interest for the scientific community if improved as described in the detailed comments here attached.

As general comments the following points should be considered by the authors:

1) the hydro-morphological analysis of the Tigris River is completely missing the sediment analysis: this is crucial to understand the morphodynamics of the river from a modeling and geomorphological point of view. It seems that the authors here wanted to focus on the hydrologic (and hydraulic) part of the modeling more than on the morphological modeling. The morphological changes are only described semi-quantitatively, while a larger description is given to the hydrological characterization.

2) the classification of 'instable river' (chapter 4) is questionable: what is a 'stable river' according to the authors? is it there any river -similar in size and discharge to the Tigris- that does not shows processes of deposition and erosion?

3) the data series of discharge (liquid and solid) and of morphology are not consistent: the morphological data (1976, 1991, and 2006) and the discharge data (2000-2010) have different time windows making difficult if not impossible to correlate the cross sections of the year 1976 and 1991 with the discharge data here presented only for the interval 2000-2010. Also the availability of only one decade (2000's) of discharge data limits a lot the hydrological analysis. Data from the neighboring countries on discharge are completely missing in the paper, despite playing a big role in the river's hydrology.

4) if allowed, an annex with the data used would improve a lot the paper and the reader in understanding the limitations and constrains of working in an environment like the Tigris River in Iraq.

Best Regards.

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Please also note the supplement to this comment:

<http://www.hydrol-earth-syst-sci-discuss.net/9/C2480/2012/hessd-9-C2480-2012-supplement.pdf>

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 5671, 2012.

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