

## ***Interactive comment on “A review of applications of satellite SAR, optical, altimetry and DEM data for surface water modelling, mapping and parameter estimation” by Z. N. Musa et al.***

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This paper reviews the capabilities of satellite remote sensing (optical, SAR, altimetry, DEM) to map and model surface waters and estimate parameters.

The paper is generally well written and these topics definitely deserve a review. The review the authors put together is an informative read. Having said that though there are a number of major comments/suggestions that I would like to make and which should be addressed. I wish to note that I decided to present my comments/suggestions in a general form since I believe most of what needs to be done for the revision of this

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paper is more general rather than specific, detailed changes.

- This is a very broad review in the sense that many different topics are touched upon but what is missing in most sections is the details. There has been a lot of progress in each of the topics treated but most of this progress comes short in many sections, especially the sections on optical, SAR and DEM
- What is also missing is a section on what comes next and what the new directions are/would be
- I would recommend restructuring the paper so that the sections that are currently there are giving a concise summary of the most recent scientific and applied science progress and then a large/main section on how the near-term directions may take place and what they are/should be.
- The above point would also set this review paper apart from other similar reviews on these topics, which there have been many in recent years
- The paper could do with more figures/illustrations. At the moment there are only two general illustrations
- Some paragraphs also need revision/rewording to make sure they transition better with sections that follow, for instance the introductory paragraph of section 2 is specific to optical/thermal RS but then section 2.1 is entitled "SAR data applications"
- I really like section 3 but I think this should be turned into the main section. At the moment this section is really thin and a lot of interesting points will be missed by the reader (see my point earlier)

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