Reviewer's report

Title: Myofibre Segmentation in H&E Stained Adult Skeletal Muscle Images using Coherence-Enhancing Diffusion Filtering

Version: 2 Date: 6 June 2014

Reviewer: Harald Koestler

Reviewer's report:

The manuscript presents a comparison study of different methods for segmentation of skeletal muscle images.

Overall, the paper is well-structured and readable, the results are sound.

Major Compulsory Revisions:

Major comments:

- weak fibre boundaries: to my opinion the shown results are mainly working well for strong fibre boundaries and all tested methods will not work well for weak fibre boundaries. is there any idea for future work to improve the quality for that case?

- whole image segmentation: as i understand your process is semi-automatic, perhaps you should briefly summarize which steps have to be done manually and which parameters have to be tuned (manually) for segmenting a new data set as a whole.

- in figure 2 you show the flow-diagram of your segmentation procedure. It would be nice to show in figure 3 the images after each of these steps and mark the steps also in figure 2 with numbers. especially the raw data would be interesting. To me it is not clear how difficult the segmentation is in fact, because in figure 3 A the images look already quite "nice".

- clearly, coherence-enhancing diffusion filtering is used in many imaging applications, perhaps some more references could be added since it is central in your manuscript

- it should be stated around table 1, which parameters one has to set in the other steps of your segmentation process, such that the results become more reproducible

Minor comments:

- in the background section some points are mentioned twice, so i think it can be shortened by some extent

- figure 6 is not displayed correctly in my pdf

- reference 1, 3, 23: ???
**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests