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Solid Earth Discussions

Interactive comment on "Beam-hardening correction by a surface fitting and phase classification by a least square support vector machine approach for tomography images of geological samples" *by* F. Khan et al.

Anonymous Referee #2

Received and published: 3 February 2016

Dear Authors,

I regret to tell you that from my point of view your paper is inacceptable for publication.

There are several reasons for that:

1) Two topics (BH and "least square support vector machine") are glued together, which are simply two consecutive processing steps of many and sold as a new procedure (Abstract line 4). BH approaches exist many in the literature and the vector machine (VM) approach itself is not new (page 3385, line 24). I would not call this combination

(BH+VM) a new approach.

2) The whole procedure is described for 2D datasets. The complexities of geomaterials require the handling of 3D datasets.

3) In the Abstract it was stated: "A minor drawback is that the proposed segmentation algorithm may become computationally demanding in the case of a high dimensional training dataset". This was not discussed further. I ask myself: Is the approach really useful for anything? Not discussed in this manuscript.

4) On page 3395 (line 2) you state that there are three phases: "halite, anhydride and clay minerals". How you know? Where is the geological description of your sample? How arbitrary you have selected the phases with your chosen resolution with respect to the real rock sample? Unclear.

5) In the last sentence of your Conclusions you state that there is a companion paper, which present a comparison of your methods. This is maybe useful to judge your classification algorithm. The present manuscript is not able to justify your approach.

Hope this helps.

Interactive comment on Solid Earth Discuss., 7, 3383, 2015.