

## Response to referee B on critical remarks.

1. The section 1 is revised. The philosophical and historical parts of it is removed. The paragraphs 2 and 3 are new. They are intended to shortly describe the proposed method and show its advantages. But they are still a bit philosophical.
2. I have removed all the parentheses in the text except one in the proof of lemma 1 (line 3 from the top, page 7), because, I think, it is a remark inside of the formula above. If it is necessary I will remove parentheses.

3-4-5. Now, section 2 does not contain any subsections. Subsection 2.3 is completely removed as suggested. All unnecessary paragraphs are removed. The definition of a contravariant functor is not included, but the sentence when this notion is used is given with more details. If necessary, I will include the definition. The spelling errors were corrected.

6. I have just little changed the sentence “The problem is to extend the original set of data into leaves of the foliation disjoint from the original set such that *the operation* was natural, commuting with the accepted transformations of data.” Instead of *the operation* I substituted *the operation of extension* (It includes implicitly that there is a functor of extension and an inclusion, because it is an extension). If it is absolutely necessary, I will change this sentence.

The term ‘infomorphism’ is used informally as an arrow from a suitably generated subcategory of admissible maps of the data model category. This notion is not axiomatized and used intuitively as a prior information with some examples in the text. Several sentences about what *infomorphisms are* are included in paragraph 2 of Introduction, page 1, and paragraph 1 from the bottom, page 4. It would be nice to formally define infomorphisms as mappings which preserve information of the data. In this case, there should be defined what information of the data is. It does not look that it is sufficient to use Shannon entropy. In the paper, when we apply an *infomorphism*, it means that the resulting data *do not lose any consequences* which can be made from them.

When *infomorphisms* were used intuitively and implicitly there was a clearer definition of *extension of the data* (**definition 1**) and also a clearer formulation of **proposition 1**, page 5. Now, I had to change both **definition 1** and **proposition 1**, page 5. The new operation (dot in the circle) is essentially the same as before, but it makes the operational content less intuitively clear. Maybe, it is better to keep the previous version on this part?

7. The first paragraph of Section 4 is removed. MultyMet is changed for MultiMet as suggested. Notation ‘MyltyMet with upper arrow’ is explained in an explicit **remark** after the formulation of **lemma 2**, page 7, before *Proof*. The phrase “about an invariant extension” after **Lemma 2** is changed for “invariant extension”. The notation with double membership in one formula is changed. It is written now separately.
8. The first three paragraphs of section 5, pages 8-9, were changed. They little repeat what was said about model errors in the Introduction, but from the point of practical experience, and in little different words. The mentioned in the previous version of the paper concern that this method does not contain a theorem about how much the density of the extended data differs from the density of the original data is omitted and hidden in the sentence that it can work directly with the density and that the method gives its estimation with maximal confidence within the framework of this method. The paragraph before section 5.1, page 9, about *parallel functions* is given with more details. The sentence “Modification is as follows” is changed into “The modification is as follows”.
9. “The algorithm was performed ..” is changed into the suggested phrase. Now, there are little more details on the implementation of the algorithm in the example. Two more pictures are included on page 12 to show the appearance of the Lipschitz uncertainty function at some point of the parameter space as a function of unknown parameter (price). At all of 100 points of the extended data these functions look somehow similar. The global minimum of these functions at each point is taken as the prediction.

Thank you for all critical remarks,  
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