

Supplement to the opponent review to the master thesis of

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named

Model of control and information on a stretch of road using data from ATC and FCD

The work deals with checking existing and proposal of new measuring devices from the viewpoint of sufficiency of the measured data with respect to data management.

The work consists of six parts the first of which is Introduction and the last one is Conclusions.

The second chapter deals with existing measuring devices. They are classified and described. Their advantages and disadvantages are discussed. This part is well organized and nicely written.

Then, the chapter called Theory follows. At its beginning, the most frequently used traffic variables and the formulas of their definitions are listed. For prediction, the method of triple exponential smoothing is introduced.

In the next chapter, the data analysis is tackled. This part is somehow chaotic and unsystematic. Here a task of classification is mentioned, effect of floating cars is discussed and tested and comparison of the work of floating cars with stationary devices is provided.

The last but one chapter is called Summarization. Here, a bit chaotically the conclusions of the thesis are listed.

The chapter Conclusions lacks systematicness and completeness.

I have the following comments to the work:

1. The setting of the thesis is clear and reasonable. The formulation of the task specified in the thesis is a bit chaotic. The aim is mentioned many times and it always differs a bit. One can conclude that the aim is to check and prepare data measurements for the subsequent design of traffic management which however is not known, yet. I think, that the design of data measurement must be tightly connected with a specific type of management. Moreover, in the conclusion the author writes that the task of generalization and unification is not ready yet and it should follow.
2. The elaboration of the work practically follows the assignment, however its individual segments are sometimes bit chaotic. The titles are often unbalanced. The text is not easy to read. It can be caused by the fact that the text should have been more revised by the author.

3. The English used is rather poor. The word order is violated very often which also causes bad readability of the text.
4. There is also a mention of an hourly prediction of the traffic data. It is motivated by checking the validity of measured data. I do not see any necessity for hourly prediction in this case. It can be done by a prediction of yet unmeasured value of a variable.
5. In the work, it is also said, that the aim is to check if the measuring systems are sufficiently dense to give relevant information. However, only a short piece of the motorway (from Prague to Beroun) is investigated. I am afraid, this is insufficient for a generalization that is declared.

I have the following questions:

1. Classification of vehicles is involved and its accuracy is investigated. What is the reason for it?
2. On page 59-60, a linear interpolation of traffic data is introduced. If it is really interpolation it is too simple. Much better ways are at disposal. Also it is not clear, what are the data used for it. Is it only one period or many historical periods somehow smoothed?
3. How can data prediction be used instead of measured data in case of detector malfunction.
4. On page 46, the method of triple exponential smoothing is introduced by formulas (6). Can you comment their meaning?
And especially, the method of least squares for estimating the unknown coefficients is recommended. Could you explain how it works and which data it uses?

The final evaluation of the work is as follows: The student presents a good deal of work that has been done. He could take a bit more care to what and how he wrote. However, the objections to the work by their nature are rather marginal. They do not collide with the assertion that the results of the thesis fulfill the assignment. I recommend to evaluate it by the mark D.

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