The candidate states four principal objectives for his Ph.D. Thesis:

1. Analysis of efficient protocols for patient identification.

2. Modelling of the errors in devices that continuously monitor glucose levels.

3. Uncertainty characterization of glucose metabolism models.

4. Validation of the uncertainty modeling using real patient data.

From my point of view the most important contribujtion of the thesis is found in point 4. Objectives 1 to 3 are majorly devoted to an exhaustive description the state of the art and to revise different methodologies to be applied in Part III of the thesis. Therefore, I would suggest to drastically shorten Part I and II of the document and also I would avoid to state ¿literature review¿ as main objective of the thesis. The author should concentrate on his own contributions.

METODOLOGY

To start with, the author has presented an exhaustive revision of the state of the art, unfortunately a bit obsolete. This is not necessary. It is enough to mention the models and interval analysis methodology that he has used. We suppose that he has performed a revision of the literature and that he has selected these particular methods due to their advantages in this application, which is an habitual practice for any researcher. The author should clarify exactly these two points.

The candidate should be more careful with the notation in the lots of equations he has written. Some variables are not explained, other are used twice for different definitions.

The candidate has used an already existing glucose metabolism model and has performed an interval parameter identification using well known algorithms and methods. The main contribution of this work lies in the application of the interval methods to the glucose metabolism model. He could have enhanced his contribution if he had analyzed the particular case and abstracted some characteristics that could have been applied to other models. He could have also tested different interval identification methods for this particular model.

The results have been published in different conference proceedings and journals. The results are interesting, from theoretical point of view and also from the practical one.

The main strength of the work is that the candidate has worked with real patient data. This is also its main drawback due to the reduced number of experiments. A statistical evaluation of the results is not possible and therefore also the use of this methodology for clinical practice is not possible.

Sure that in the future this method should be verified and validated through more extensive experimentation. It would also be interesting in future work to apply these results to robust control in ¿artificial pancreas¿. The interval identification is the basis for guarantied prediction. The candidate should analyze how his work can be used in the control area, especially due to the fact that the Ph.D. is applied for in Automation, Robotics and Computer Science for Industry.

The main issue that I would highly recommend to change is the depiction of graphical material that belongs to already published papers. The candidate has used this material without the permission of the publications. Even in those cases, where he is co-author of a paper he must have a written permission of the publishing institution. If this is not changed he could be easily be accused of plagiarism. Also for the UPV it can be a very critical point and may end up in a severe fine. If this is not changed I won't be able to recommend the continuation of the process.

Another critical point is the presentation of the data in Part III. The candidate presents the patient data as they were measured by him, what I suppose is not the fact. The candidate should absolutely clearly state who has taken the data presented by him in Part III.

The candidate should critically revise the formal aspects of the Bibliography.

In spite of devoting more than 50% of the text to a revision of the state of the art, besides one work from Hovorka and other 3 citations of 2012, all other citations from 2012/13 are from the research group where the work has been developed. Considering that the author has cited 97 articles I would recommend a more detailed revision of up to date literature.

And finally, the candidate should revise his English. I suppose there are some language services at the UPV that could help if English as foreign language is used.

A list of figures and symbols could be very useful for the reader.