CZECH TECHNICAL UNIVERSITY IN PRAGUE

I. IDENTIFICATION DATA

Thesis title:	**Virtual model of suspension system**
Author's name:	**Click here to enter text.**
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	**12120**
Thesis reviewer:	Ing. Tomáš Pánek
Reviewer's department:	12120

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**ordinarily challenging**
How demanding was the assigned project?	
Moderately demanding.	

Fulfilment of assignment	**fulfilled**
How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.	
The thesis fulfilled the assignment in its entirety.	

Methodology	**correct**
Comment on the correctness of the approach and/or the solution methods.	
The solution method is correct.	

Technical level	**C - good.**
Is the thesis technically sound? How well did the student employ expertise in the field of his/her field of study? Does the student explain clearly what he/she has done?	

Several technical inaccuracies and unpleasant simplifications appear in the work.

On page 24, the author mentions cars that use double wishbone suspension. Here I would like to say that it is appropriate to add the specific generation of the car, because for example the BMW 5 series and the Porsche 911 used the MacPherson suspension type in previous generations.

The brake caliper is, in my opinion, very simplified, the pads are part of it, even though in this case it would not take too much time to make the pads separately and lock them in the caliper with 2 steel pins, after all, as is the case with a real caliper of this type.

What I think is a much more serious offense is the misunderstanding of the placement of the braking device and therefore, either there must be a floating caliper or a disc. In this case, the Audi R8 has a floating disc. In the model, this disc was unpleasantly simplified and became a non-floating disc. The mounting of the caliper was then based on the original construction and is also fixed.

In a work of this type, I would expect these details to be captured and handled much better.

Formal and language level, scope of thesis	**B - very good.**
Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?	

The thesis lacks a clear division of the theoretical and practical part of the thesis. In that part, which then appears as the practical part, a description of the individual components appears, which would fit snugly into the theoretical part of the thesis. Regarding the description itself, I would like to warn the author to be more careful with the use of the words "significant" and "key" next time. Each functional part of the axle is significant or key, so it would be good to leave out these

additional words and be more factual. By this I allude to the fact that I missed some essential things here.

There are also several typos in the work, for example on page 47 the word "disks" appears. Then on page 57 there is a cascading formula adjustment, which doesn't look very nice.

Selection of sources, citation correctness	**A - excellent.**
Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?	
Source selection is fine.	

Additional commentary and evaluation (optional)
Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.
Overall, I rate the work positively. I am only sorry for some simplifications that also lead to a bad technical solution.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Regarding additional questions, I have the following:

What are the advantages and disadvantages of double wishbone suspension versus MacPherson. Are there any values that can be set on the double wishbone, but not on the MacPherson?

What specialized equipment do you have in mind when repairing/maintaining this type of axle? And do that equipment differ from maintenance of "more common" types of suspension?

The grade that I award for the thesis is **B - very good.**

Date: **16.6.2024**   Signature: