OPPONENT’S ASSESSMENT ON DIPLOMA THESIS

Student’s name and surname: Narender Padmanaban

Name of the diploma thesis: Experimental Investigation of the Wake behind the Bluff Body with Heating

Supervisor of the thesis: Ing. Petra Dančová, Ph.D.

Opponent: Ing. Vít Lédl, Ph.D.

1. Diploma thesis evaluation

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>excellent</th>
<th>excellent minus</th>
<th>very good</th>
<th>very good minus</th>
<th>good</th>
<th>failed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting the goal and fulfilling task of the thesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Quality of conducted survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Methodology of solutions</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expert level of the thesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Merit of the thesis and its potential applicability of results</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal and graphic level of the thesis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Student’s personal approach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark x in the corresponding box.
Supervisor’s final evaluation is based on his/her overall subjective evaluation.
Grading is stated literally in the article no. 5, neither by a number, nor by a letter.

2. Comments and remarks on diploma thesis:

Meeting the goal and fulfilling task of the thesis: There are six goal defined in thesis:
First goal was fulfilled partially. Author shows some basic principles of bluff body flow and of wake formation. The up to date results are missing.
Second and third goals were fulfilled. Autor prepared experimental setup and designed heater of bluff body.
Fourth and fifth goals were fulfilled partially. Autor has performed experiments. However presented results are of low quality.
Sixth goal was not fulfilled. Comparison of the results with work of other authors is not presented.

Quality of conducted survey: The quality of the survey is low. Author refers to 12 important publications that deal with the problem of wake behind bluff body. However, it is evident from the thesis that these sources were not used by the author. Otherwise, he would certainly have to avoid significant mistakes.

Methodology of solutions: The method of solving the problem was chosen correctly. The PIV method in combination with LIF method can be considered as standard tool for research of flow structure. Thesis contains a description of the chosen methods. This is done at a very good level. Unfortunately, the application of selected experimental methods is insufficient. The work does not contain any usable results.
Expert level of the thesis: The thesis deals with the study of flow structure using modern experimental methods. This could be considered as topical problem of fluid mechanics. On the other hand, the results presented are of poor quality.

Merit of the thesis and its potential applicability of results: Experimental setup and used experimental methods are applicable. Results are not applicable at all.

Formal and graphic level of the thesis: Formal and graphical level of the thesis is very good. Student’s personal approach. Opponent appreciates usage of own graphics. These could be done with more care.

3. Questions about diploma thesis:

Used Reynolds number seems to be high and does not correspond to presented velocity and size of bluff body. Describe, how Re has been calculated.

4. Opponent’s statement whether the diploma thesis meets the academic title requirements and whether it is recommended for defense:

I recommend this work for defense.

5. Opponent’s grading:

Good

Date 24.5.2019, in Turnov

Opponent’s signature