

## OPPONENT'S ASSESSMENT ON DIPLOMA THESIS

**Student's name and surname:** Surendaran Kathiresan

**Name of the diploma thesis:** PIV Investigation of the Bluff Body in Water

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

**Opponent:** Ing. Rut Vitkovičová

### 1. Diploma thesis evaluation

Evaluation	excellent	excellent minus	very good	very good minus	good	failed
Meeting the goal and fulfilling task of the thesis					x	
Quality of conducted survey				x		
Methodology of solutions				x		
Expert level of the thesis				x		
Merit of the thesis and its potential applicability of results						x
Formal and graphic level of the thesis			x			
Student's personal approach					x	

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:

The first task was to analyze the state of art of the issue. This part can be considered very well with reservations. First reservation: on page 12 the relation (3.5) between the Strouhal number and the Reynolds number is given, but nowhere is it said that this is only true for the circular cylinder. And today it is possible to find more accurate functional dependencies of these numbers. Second reservation: too many pages due to the scope of the whole work (almost 2/3 of the whole text). The next part is the design of the experiment and its setup. The description of the measuring devices is sufficient, but the method of evaluating the acquired images is not described in section 5.7. What kind of correlation was used and its settings and how many frames were used to evaluate the velocity fields. At the same time, it is not clear to me why the author did not find the frequencies also from the velocity fluctuations from the measurement. In the Results and analysis section, the measurement results are presented. The vortex street cannot be unambiguously recognized from the images of the velocity field. It would be good to pay attention to why this is so. The reason for choosing the origin of the coordinate system is not apparent from the Figures. It is also not clear in which position the tested cylinder was located. The text is missing information, for what velocities (average in position?) or vortices were created graphs of velocity and vorticity (there is no mention of how vorticity was obtained).



**3. Questions about diploma thesis:**

1. How was the measurement data processed, resp. how was the velocity field created by the DaVis FlowMaster software from the images?
2. How many images were used to evaluate the velocity field?
3. Show in your coordinate system where the cylinder was located.

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

The diploma thesis meets the requirements of the academic title and I recommend to the defense.

**5. Opponent's grading: Good**

Date 22.5.2019 in Prague



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*Opponent's signature*

