REVIEWER'S FORM
for thesis evaluation

1. Identification of the student

Student:	Madeleine Isabelle Fayle
Thesis:	Numerical and experimental analysis of the Bell Tower of St. Jacob's Church in Kutna Hora Town
1st Institution:	Universidade do Minho
2nd Institution:	Czech Technical University in Prague
Academic year:	2021/2022

2. Identification of the reviewer

Name:	Vladimír Šána
Institution:	Czech Technical University in Prague
Position:	Assistant Professor

3. Fulfillment of thesis goals

excellent **x** above aver. ☐ average ☐ below aver. ☐ weak ☐

Comments:

All of the objectives identified at the beginning of the submitted diploma thesis have been successfully fulfilled.

4. Academic/scientific/technical quality

excellent **x** above aver. ☐ average ☐ below aver. ☐ weak ☐

Comments:

Lot of work was done, and lot of time had to be invested in order to bring this thesis to a successful conclusion. Student proved technical deep insight into the branch of structural dynamics which was necessary during model fitting process. The obtained results of natural frequencies are remarkable accurate in relation to the experiment.

5. Formal arrangement of the thesis and level of language

excellent **x** above aver. ☐ average ☐ below aver. ☐ weak ☐

Comments:

The whole thesis is logically divided into individual chapters. I have no comments or suggestions here.

6. Further comments

The student optimized the complex computational model to obtain high degree of accordance between experimental and numerical natural frequencies and mode shapes.

I have got couple of questions and comments:

- I would recommend adding the Table with differences between calculated and measured frequencies in [%] for better visualization of the degree of accordance.
- I would recommend using the same time scale of the x axis for better comparison of time behaviour (Tab./Fig. 8, 9, 10).
- Capital letters and appropriate bold font for matrix and vector notation should be used in Eq. 1.
- Which method was used for theoretical modal analysis?
- How did you obtain displacements from the measured data? Did you use some filters to the data during integration process of measured accelerations?
- Could you explain why the testing displacement data has the initial value approximately 0.5 mm Tab./Fig. 8?
- Usually, the guidelines require velocities for judging the level of comfort. What was the value of the maximal velocity?
- Measured time behaviour of the bell-induced vibration differs from the behaviour obtained by the numerical simulation, nevertheless the model seems to be adequate for the objectives of the thesis.

7. Grade: A (excellent)

Use the following scale

A (excellent)	B (very good)	C (good)	D (satisfactory)	E (sufficient)	F (fail)

Prague

July 16, 2022

The Reviewer,

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