REVIEWER'S FORM
for thesis evaluation

SAHC

1. Identification of the student

Student:	Dwipayana Ali Muhammad Hanafiah
Thesis:	Numerical Analysis of Bell Tower of St. Jakub Church in Kutná Hora
1st Institution:	UPC Barcelona/UNIPD Padova
2nd Institution:	Czech Technical University in Prague
Academic year:	2016/2017

2. Identification of the reviewer

Name:	Michal Polák
Institution:	Czech Technical University in Prague
Position:	Professor.

3. Fulfillment of thesis goals

excellent ☑ above aver. ☐ average ☐ below aver. ☐ weak ☐

Comments:

The goals of the thesis are defined in the "Master's Thesis Proposal". All of them were fulfilled.

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4. Academic/scientific/technical quality

excellent ☐ above aver. ☑ average ☐ below aver. ☐ weak ☐

Comments:

Page 6 - It is written in the thesis: "There is presence of cracks on the structure. Most of the cracks on the tower appear on the inner side of the wall, the cracks are having a vertical pattern suggesting that the cause of the cracks is from compressive load." It would be serious, if the compressive load was the cause of the cracks. Is it not possible, that the cause of them is a fire? In the past, the fire hit the tower.

The procedure "the ambient vibration testing" is not stated in the chapter 2.5 "Structural Modal Testing". Actually, the ambient vibration testing was used during in situ experiment on the investigated tower. The non-controlled driving forces (for example environmental loads and dynamic loads induced by a human motion) were used during this procedure.

Page 23, Figure 23 – I think, the supports "ux" on the end of the church's vault system have to be restrained as well.

Page 26 - The bell is a solid 3-D object. The calculation of its moment of inertia to a horizontal axis for its model as a 1-D object neglected the influence of the distribution of its mass around the vertical plane.

Page 26 – The variable „is" (the mass radius of inertia) was calculated incorrectly. Firstly the calculation of the result 1289.1 m^5 does not include the mass of the bell, secondly the square root is not included in the second part of the equation for „is".

Page 39 - The level of acceleration (and not velocity) is usually used for assessment of vibration exposure to human beings.

The resonance effect is significantly influenced by damping. In the thesis, the value of damping used for the analysis of the resonance effect and other cases of force vibrations is not stated.

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5. Formal arrangement of the thesis and level of language

excellent ☐	above aver. ☑	average ☐	below aver. ☐	weak ☐

Comments:

I have no remarks to the formal arrangement of the thesis. However, I found more than ten grammar and language mistakes. For example, the missing letter "t" in the word structure on the page 5, the missing verb "was" in the sentence "The bell tower also…" on the page 2, the incorrect use of the word "it" instead "them" in the sentence "…… several harmonic components which the multiplication of it could …." on the page 42.

6. Further comments

In general, the thesis under consideration is interesting. The author fulfilled all defined goals. Published results are of practical significance. However, I found two computation mistakes.

7. Grade: B (very good)

Use the following scale

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

Prague

July 20th, 2017

The Reviewer,

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(prof. Ing. Michal Polák, CSc.)