REVIEWER'S FORM
for thesis evaluation

1. Identification of the student

Student:	Mayra Alejandra Estrella Núñez
Thesis:	The monitoring of historic buildings exposed to technical seismicity and other dynamic effects
1st Institution:	Universidade do Minho
2nd Institution:	Czech Technical University in Prague
Academic year:	2021/2022

2. Identification of the reviewer

Name:	Ing. Petr Zlámal, Ph.D.
Institution:	Institute of Theoretical and Applied Mechanics, Czech Academy of Sciences
Position:	Head of the Laboratory of Biomechanics

3. Fulfillment of thesis goals

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

Since the thesis lacks its official assignment, the fulfilment of the goals set in Chapter "1.2 AIMS" was assessed. The general objectives (and specific ones) listed in this chapter were satisfactorily fulfilled.

4. Academic/scientific/technical quality

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

Comments: Cultural heritage and the protection of historic buildings is currently a widely discussed topic. Science in cultural heritage is highly multidisciplinary and uses a combination of experimental, numerical and analytical methods. In this thesis, all of these methods are used to satisfy the monitoring and predicting the behaviour of historic buildings exposed to technical seismicity and other dynamic effects. The performance of these methods is demonstrated in the case study (The Basilica of the Assumption of the Virgin Mary). Although suitable methods are used, their description in the thesis is relatively weak and it would be most appropriate to expand these passages.

5. Formal arrangement of the thesis and level of language

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

Comments: From the point of view of the formal arrangement of the thesis, I would divide the manuscript into two halves. The first part (chapter 1 and 2) is clearly written with a minimum of typos (e.g. missing/redundant spaces between characters, unfinished sentences). On the other hand, the second part (case study and results) contains a large number of inaccuracies (e.g. Figure 3-15. shows the stress instead displacement), hard-to-read graphs and images (e.g. Figure 3-8, Figure 4-5., Figure 4-6.), missing citations (Figure 3-10 etc.), wrongly labeled images (Figures 13 and 14 not exist), missing units (mostly μ) in text and graphs etc.

6. Further comments

As mentioned above, the thesis deals with the current topic. Unfortunately, the thesis shows quite a few errors (both formal and functional), it would be most appropriate to describe the applied methods in more detail (e.g. rainflow analysis, FEM model, data acquisition and post-processing chain) and also more, clearly and deeply discuss and present the obtained results. Finally, I have a few questions related to the thesis work: *1) Could you describe more the numerical model used for the vibration modes analyse? (material model, type of elements, definition of the loading, computational time etc.); 2) In the experimental campaign, 20 accelerometers were installed, but the DAQ has sixteen channels. Were some accelerometers switching during the measurement or was part of the accelerometers redundant?; 3) Could you describe more the principle and individual steps of the rainflow analysis applied to the estimation of the maximum amplitudes of vibration?*

7. Grade: D (satisfactory)

Use the following scale

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

Prague, July 19, 2022

The Reviewer,

_____

(Ing. Petr Zlámal, Ph.D.)