ČVUT
ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE

REVIEWER´S ASSESSMENT OF FINAL WORK

I. IDENTIFICATION DATA

Title:	**Longitudinal Electron Beam stability at EuXFEL and FLASH at DESY**
Author´s name:	**Roman Janovcik**
Type of assignment:	Bachelor Project
Faculty:	Faculty of Nuclear Sciences and Physical Engineering (FNSPE)
Department:	Department of Physics (DP)
Reviewer:	Dr Inaki Ortega-Ruiz
Reviewer´s affiliation:	European Organization for Nuclear Research (CERN)

II. ASSESSMENT OF CRITERIA

Work assignment — **demanding**

Assess how demanding the work topic is.

This project required a deep understanding of the working principles of complex systems, specifically those of the Free-Electron Laser and Bunch Arrival Monitor (BAM). Using this foundational knowledge, the project aimed to investigate the impact of various observables, including noise, temperature, and humidity, on the BAM's system performance. This analysis required using signal acquisition electronics, such as Analogue-to-Digital Converters (ADCs) and sensors, followed by data analysis. Given the project's scope and the specialised knowledge involved, I consider it quite challenging for a bachelor's student.

Fulfilling the assignment — **fulfilled**

Consider whether the work submitted meets the assignment. If necessary, give your comments on items of the assignment not fully answered, or judge whether the scope of the assignment has been broadened. If student failed to fully treat the assignment, try to assess the importance, impact and/or the reasons for the failings.

The student demonstrated a solid theoretical understanding. He provided an insightful introduction to particle accelerators and free-electron lasers. Specifically, he exhibited a thorough understanding of the EuXFEL free-electron laser and the BAM monitor. He effectively analysed the impact of noise, temperature, and humidity on the BAM monitor's timing performance. I am confident these findings will be valuable for the instrument's operation.

Chosen approach to solution — **appropriate**

Assess whether student applied a correct approach or method of solution.

The student effectively employed the appropriate tools and methods to achieve the project's objectives. He utilised ADCs and other signal acquisition electronics to gather pertinent data from both the BAM monitor and the surrounding environment. Following this, he meticulously analysed the data and concisely presented the findings.

Professional standard — **excellent**

Assess the professional standard of the work, application of course knowledge, references, and data from practice.

The student's methodology and the calibre of work presented are commendable. Additionally, his writing and presentation abilities are of an exceptional standard.

Level of formality and of the language used — **excellent**

Assess the use of scientific formalism, the typography and language of the work.

The manuscript's format and the application of scientific terminology meet the standards of quality scientific work.

Choice of references, citation correctness — **excellent**

ČVUT
ČESKÉ VYSOKÉ UČENÍ TECHNICKÉ V PRAZE

REVIEWER´S ASSESSMENT OF FINAL WORK

Assess student´s effort in finding and using study sources for completing their work. Give characteristics of the references chosen. Assess whether student made use of all the relevant sources. Verify whether all items used are properly distinguished from the results obtained by student and their deliberations, whether there are no violations of citation ethics, and whether the bibliography presented is complete and complies with the citation usage and standards.
The student has diligently documented and cited pertinent sources, enhancing the manuscript's credibility. The provided citations adhere to scientific conventions. In a 43-page thesis, he has cited a total of 33 references.

Further comments and assessment *Give your opinion on the quality of the main results obtained in the work, e.g. the theoretical results, or the applicability of the engineering or programming solutions obtained, publication outputs, experimental skills, and the like.*
The student has delivered commendable scientific work. The challenge level was appropriately tailored for a bachelor's student, and the outcomes should be significant for the functioning of the BAM monitor.

III. OVERALL ASSESSMENT, QUESTIONS TO BE ASKED DURING THE WORK DEFENCE, SUGGESTED GRADE

Summarize those aspects of the work that were significantly influential for your overall assessment. Suggest questions to be answered by student during the defence of the work before the examination board.
Click here and insert the text.

Suggested grade: **A - excellent.**

Date: 24/08/2023

Signature: