

EXAMENSARBETARE SÖKES!

VIBRATION LEVELS IN MAX IV

- Development of computational models and predicting effects of design solutions



DESCRIPTION

The vibration sensitivity of accelerator components and optical instruments puts a high demand on floor stability in synchrotron accelerators. Several external vibration sources can disturb the seamless operation of such facilities, among others heavy road traffic, high-speed railways, or nearby construction activities. Vibration issues are best addressed in the early design phase, which requires sophisticated calculation methods to consider prevailing soil conditions and planned (or already existing) structures.

The proposed degree project could investigate one of the following issues by analytical and/or experimental means:

- Predicting vibration levels due to heavy traffic in future underground structures
- Development of computer-based model to study of vibrations due to speed bumps
- Development of computer-based model to predict effects of nearby construction activities on the accelerator building

ABOUT MAX IV

MAX IV is a Swedish national large-scale research laboratory hosted by Lund University. It provides scientists from Sweden as well as internationally, with state-of-the-art instrumentation for research in areas such as engineering, physics, structural biology, chemistry and nanotechnology. Fully developed it will receive more than 2 000 scientists annually, conducting ground-breaking experiments in materials and life sciences using the brilliant X-ray light.

OUR DIVISION

We at the Division of Structural Mechanics are driven by understanding engineering problems and conducting research that contributes to solving societal challenges. We offer a good study and work environment, good team spirit with dedicated employees and joint "fika" every day. We have a strong focus on high-quality teaching and research. We are proud to belong to a university that is ranked among the top 100 in the world and we enjoy the international environment in which we operate.

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