

19.02.2024

Master or Bachelor thesis

Analyzing power consumption of KARA accelerator

Job Description:

Accelerators are complex and energy-consuming and require a stable and high-quality power supply typically provided by the public electrical grid. However, the inflexible power demand of accelerators makes it challenging to maintain a stable power supply. As a result, accelerators have a negative impact on the management of the public grid since the public grid is not designed and able to follow fast and high impedance power variation. In order to improve the stability and energy efficiency of accelerator operations, it is crucial to analyse the power consumption of whole accelerator and crucial components of accelerator to find the pattern in different scenario. Join our team in the collaborative effort between the Power Hardware in the Loop lab at Energy Lab 2.0 and the synchrotron KARA at the Institute for Beam Physics and Technology to dive into the heart of accelerator operations, analysing extensive datasets to identify algorithms governing power consumption.

What we offer:

- Engage in hands-on research at the intersection of accelerator technology and energy efficiency
- Flexible working hours and location
- Friendly work environment

Your Tasks:

- Preprocessing raw data
- Formulate different scenarios, such as winter or summer, different operational modes, start-up, and shutdown of the system
- Time series Analyzing to find the pattern in different scenarios

Your Profile

- Strong analytical and data analysis skills.
- Experience with Excel and Python programming or MATLAB
- Basic knowledge of particle accelerator facilities will be considered a plus.

If you are interested in this position, just contact us or send us your CV with a brief mail describing yourself and your motivation – we are looking forward to your application!

Contact:



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Start: From now on

Duration: Contract length is 6 months with the possibility to extend