Dr. Francesco Guatieri

Heinz Maier-Leibnitz Zentrum
Lichtenbergstr. 1
85748 Garching / Germany

Tel +49.89.289.54713
francesco.guatieri@frm2.tum.de
www.mlz-garching.de

The Technical University of Munich (TUM) operates the research neutron source Heinz Maier-Leibnitz (FRM II) in Garching near Munich, which is one of the most powerful and modern neutron sources. The leading position in science in the field of research with neutrons is achieved by a cooperation between the TUM and the Forschungszentrum Jülich and Helmholtz-Zentrum Hereon under the name Heinz Maier-Leibnitz Zentrum (MLZ). We are looking for:

Internship - Practical Semester - B.Sc. Thesis
Physical Engineering - Computer Science - Electronic Engineering

Upgrading the control system of the world's most intense cold antimatter beam

Our facility is home to NEPOMUC, the world's most intense cold antimatter beam and a unique tool for material defect studies, surface investigation and fundamental research in quantum physics.

As applications of the beam have expanded, NEPOMUC's complexity has increased accordingly. High up-time, efficient beam optimization and quick debug of faults in a system of this complexity requires a stable and redundant control software with rigorous error handling. This requirement has prompted the overhaul of the previous beam control software and the development of a new control/diagnostic system based on resident C++ daemons running on Linux servers.

Your task will be that of aiding the deployment of the new control system in collaboration with the NEPO-MUC team. The work will involve:

1. Writing specialized drivers.

2. ntegrating them in daemon programs according to the system design guidelines and expose the proper control and diagnostic functions.

3. Testing and debugging the daemon programs, with particular emphasis on fault resistance, unexpected input and automated recovery after power cuts.

4. Aiding in exposing these functionalities as web APIs and integrating them in the beam control web-based GUI.

In case of an online application please send the documents compiled in a PDF file.