Doctoral Candidate Position Open

Development of a beam profile monitor for ion-beam cancer therapy applications

Our group at the Heidelberg Universität Physikalisches Institute is seeking a doctoral candidate to participate in the continuing development of a beam profile monitor for use in proton and ion-therapy beams at cancer treatment facilities, such as the Heidelberg Ion-beam Therapy (HIT) Clinic [J. Inst. 13 P05030]. Developments and measurements are done in cooperation with the Heidelberg Ion-beam Therapy (HIT) clinic on the Im Neuenheimer Feld campus. The detector system is based on plastic scintillating fibres, and is intended to operate at a higher rate with narrower beams and an increased precision compared to the currently aging system of MWPCs. The candidate’s project work could include topics covering:

1. **Data analysis**, to understand the detector performance and interactions of the particles with the detector.
2. **Detector simulation**, to understand the production of neutrons and secondary fragments, and comparisons with the detector performance, or study proposed changes.
3. **Detector hardware and software development**, fast peak-finding algorithms, and FPGA programming. The candidate would have a significant impact on the realisation of the detector and its performance.

The candidate will be supported with funding from the Deutsche Forschungsgemeinschaft (DFG) at the TV-L E13(75%) contract level while participating in the beam profile monitor project.

The doctoral candidate would also have the possibility to divide their activities and also participate in LHCb high energy physics data analysis, on topics including CP-violation, electroweak penguins, hadron spectroscopy and searches for Dark Matter.

Applicants must have a Master’s degree in experimental particle physics or in a related field with relevant experience. Applications including a CV, a research statement, and two letters of reference should be sent to:

**Dr. Blake Leverington** (leverington@physi.uni-heidelberg.de),

**Prof. Dr. Stephanie Hansmann-Menzemer** (menzemer@physi.uni-heidelberg.de), and

**Prof. Dr. Ulrich Uwer** (uwer@physi.uni-heidelberg.de)

Applications are accepted until July 15th, 2019, but will remain open until filled. If you have any questions, feel free to contact the email address above.

*Heidelberg Universität is an equal opportunity employer and welcomes applications from women. Handicapped applicants will be preferentially treated, if equally qualified.*