The Semiconductor Laboratory of the Max-Planck-Institutes for Physics and for Extraterrestrial Physics offers Positions for Diploma (Master) and PhD Students

for research on:

Characterization and Development of Active Pixel Sensors for future Vertex Detectors in High Energy Physics Experiments

The Semiconductor Laboratory of the Max-Planck-Institutes for Physics and for Extraterrestrial Physics, based in Garching near Munich, offers research positions for students in Diploma (Master's) and PhD studies. The focus is on the characterization and development of active pixel sensors for future vertex detectors in high energy physics experiments.

The Laboratory designs, manufactures, and tests silicon detectors for astrophysics and high-energy physics experiments. Currently, the Laboratory is developing active pixel sensors (APS) to be utilized in vertex and tracking detectors at future linear colliders. An APS is a two-dimensional detector with an amplification structure integrated in each pixel. The device is based on the DEPFET technology (Depleted P-channel Field Effect Transistor) which has been developed in the Laboratory.

First prototypes were produced in 2003. Readout electronics has been developed by our collaboration partners at the Universities of Mannheim and Bonn. The successful candidates will set up and operate a complete detector system with peripheral- and readout electronics. They should prepare, run, and evaluate measurements in testbeams at DESY or CERN. The result should be a complete characterization and modeling of the sensors allowing an optimization of the next design iteration.

The candidates should be hardware oriented and need to have good knowledge of semiconductor physics and experimental skills. They are expected to acquire knowledge about detectors and instrumentation of high energy physics experiments.

We offer the possibility to work in an unique environment with a complete infrastructure for development and manufacturing of silicon detectors and the possibility to get introduced in high energy physics experiments.

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