Contribution ID: **8**   Type: **not specified**

Simulations of the Monolithic Active Pixel Sensors for the Octopus Project

The Optimized CMOS Technology for Precision in Ultra-thin Silicon (Octopus) Project aims to develop sensors for the vertex detector for future lepton colliders. As an intermediate step, the project also focuses on developing high-resolution sensors for beam telescopes at DESY and CERN, with less stringent power and timing requirements, but focusing on achieving 3 μm position resolution.

As part of the Work Package 1: Simulation, research is being conducted to optimize sensor layouts and dimensions and better understand sensor performance. Building on extensive evaluations of n-blanket and n-gap layouts, further improvements in sensor design in the scope of the deep n-implant shape and size are under investigation.

A summer student will contribute by developing and running TCAD and Allpix² simulations, as well as analyzing the results. The student will gain hands-on experience with TCAD static simulations and high-statistics Monte Carlo simulations, both of which are essential for optimizing sensor designs and improving overall performance.

Preferred skills include familiarity with Linux, Python, C++, and basic detector physics.

Group

FH-ATLAS

Project Category

B2. Development of experimental equipment (hardware-oriented)

Special Qualifications

Preferred skills include familiarity with Linux, Python, C++, and basic detector physics.

DESY Site

Hamburg

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