

Lectures on Silicon Detectors 7-8th of April 2016

Dr. Frank Hartmann (KIT)

“Silicon tracking detectors at colliders”

General-purpose particle detectors at colliders consist of several systems that operate synchronously to measure the properties of particles created in high-energy collisions. The tracking device is a center part of each detector and requires a high resolution to track charged particles. Over the last decades silicon detectors emerged as the main tracking detectors technology. The performance of silicon detectors however is influenced by the high radiation present around the particle collision point. Detectors are designed to mitigate this degradation. Typically several layers of silicon sensors are grouped according to an optimal geometry to measure the collision events.

Location: Vrije Universiteit Brussel / IIHE – Campus Oefenplein – 1.G.003 (1st level of building G, room 003; Jean Sacton seminar room of the IIHE)

Lecture 1: Introduction to particle physics detectors at colliders (April 7; 11-12h)

Lecture 2: The physics of silicon sensors (April 7; 13-14h30)

Lecture 3: Radiation damage of silicon sensors (April 8; 11h-12h30)

Lecture 4: Tracking and vertexing detectors (April 8; 13h30-15h)

Each day, after the lectures time is foreseen for questions and discussions. If you are familiar with the topic, you might skip the first introduction lecture.

For more information please contact Prof. J. D'Hondt (jodhondt@vub.ac.be)