IHEF Bachelor Project 2012 – week 19 t/m 26

Naam van project: Simulation of GridPix detectors
Experiment: Detectors R&D
Begeleider: Matteo Alfonsi & Rolf Schön

Beschrijving project:
GridPix is a modern gaseous detector that employs a pixelated chip as readout, resulting in excellent imaging capabilities of the single interactions of the radiation with the gas. Useful hints for the ongoing R&D on such devices are given from the simulation of the detectors, because this information can drive the production to the most promising prototypes. The student will simulate important aspects of one of the prototype under development. Properties related to the choice of the gas mixture will be also studied.
Minimal C++ programming skills (or an earlier beginning to acquire them) are strongly suggested.

Doel:
The student will learn the principle of operation of gaseous detectors and the detection of radiation in general. He will go deep in the elementary processes by simulating several aspects of gaseous detectors operation. He will also learn how to model a physics problem in general.

Week	**Activiteit**	**Opmerking**
19	Intro gaseous detectors	
20	Learning Garfield++ environment	
21	Detector geometry production	
22	Study of gas properties	
23	Grid transparency studies	
24	Gas amplification studies	
25	Gas amplification studies / Report	
26	Wrap up / Report	