BND School 2016 Antwerp

Sunday, August 28, 2016 - Friday, September 9, 2016

Room K.202, Kleine Kauwenberg 14, Antwerp

Scientific Program

The BND Summer School in Particle Physics is organised yearly by a Belgian, Dutch or German Particle Physics group. The Summer School is intended primarily for experimental high energy physicists preparing a PhD in particle physics, in particular during their first two years. The lectures cover both theoretical and experimental aspects of the field.

The focus of the school alternates every year between electroweak standard model physics & tracking detectors and strong interaction physics & calorimeters. This year will be devoted to strong interactions and calorimetry with theoretical lectures on Quantum Field Theory, QCD, neutrino physics and cosmology. The experimental lectures will focus on calorimetry detectors, experimental design and computing/electronics.

The school follows an intensive schedule of roughly 60-70 hours of lectures and tutorials spread over 10 days. It contains a core theoretical program covering 6+4 hours of Quantum Field Theory with tutorials, 8+4 hours of Quantum Chromo Dynamics with tutorials and a core experimental program of 6 hours on the topic of Calorimetry Detectors. The core program is supplemented by roughly 30 hours of topical lectures that vary from year to year. These will minimally include lattice QCD, cosmology, neutrino physics and heavy ion physics. Finally the program will contain 12 hours of hands-on projects related to experiment design, literature study and computing/electronics.

The program is finally supplemented with 2 off-topic evening lectures, 2 half days of social-cultural activities and 2 or three evening activities.

Topics
Lecturer

Quantum Field Theory
Prof. KLEISS, Ronald

Calorimetry
Prof. CORTINA, Eduardo

QFT Tutorial
Dr. VERHEYEN, Rob

Student projects
Prof. VAN REMORTEL, Nick

Neutrino properties
Prof. HAMBYE, Thomas

Quantum Chromo Dynamics
Prof. DUHR, Claude

Heavy Ion Physics
Prof. KUIJER, Paul

Experimental tests of QCD
Prof. FIELD, Rick

Astroparticle Physics
Prof. BUITINK, Stijn

Large Scale structure formation
Prof. THEUNS, Tom

Lattice QCD
Prof. JANSEN, Karl

Evening Lecture: Feynman & Field and the advent of QCD
Prof. FIELD, Rick

Evening Lecture: The Science of Paintings
Prof. JANSSENS, Koen

QCD Tutorials
Prof. DUHR, Claude

Practical Statistics
Prof. BRUN, Hugues & Prof. VANLAER, Pascal