First CFP Zewail City Mini-school on 'experimental tools in particle physics'

Thursday 26 March 2015 - Saturday 28 March 2015

Other Institutes

Scientific Programme

Program:
The daily program consists of 2 lectures and 1 tutorial session.
During the 1st part of the mini-school, the lecture sessions will cover the following topics:

• Some Basic Concepts:
o Relativistic wave equations
o Interactions and Feynman diagrams
o Particle exchange
• Leptons and the Weak interactions:
o Lepton multiplets and lepton numbers
o Leptonic Weak Interactions
o Neutrino Masses and Neutrino Mixing.
• Quarks and Hadrons:
o Quarks
o General Properties of Hadrons
o Pions and Nucleons
o Strange Particles, Charm and Bottom
o Short-Lived Hadrons
o Allowed Quantum Numbers and Exotics
• Experimental Methods:
o Accelerators and Beams
o Particle Interactions with Matter
o Particle Detectors
o Detector Systems and Experiments
• Weak Interactions:
o Charged Current Reactions
o The Third Generation

During the 1st part of the mini-school, the tutorial sessions will cover the following topics:
• Introduction to C++
• Monte-Carlo tools for event generations.
• ROOT