Public | Europe/Zurich | I. Crotty

Academic Training Lecture Regular Programme

Signals in Particle Detectors (1/5)

by Werner Riegler (CERN)

Monday 2 Dec 2019, 11:00 → 12:00 Europe/Zurich

500/1-001 - Main Auditorium (CERN)

Description This lecture series discusses the mechanisms of signal generation in particle detectors as well as the electronics processing of these signals. The first lecture outlines how signals arise in particle detectors and discusses the Ramo-Shockley theorem and all related electrostatic theory. The second lecture will then apply this theorem to a wide range of detectors used in particle physics experiments, including silicon detectors, gas detectors, noble liquid detectors and silicon photomultipliers. The third lecture details extensions of the Ramo-Shockley theorem for detectors that use media of finite conductivity and they are applied to resistive plate chambers, un-depleted silicon sensors and monolithic silicon sensors. The fourth lecture discusses the theory of linear signal processing, optimum filtering and noise as well as signal propagation, termination and crosstalk.

L1_signals_in_parti... | L1_signals_in_parti... | Recording | Video preview

From the same series 2 3 4 5

Organised by Albert de Roeck /300++ participants