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Wireless Communication

Tuesday, 5 September 2023 12:00 (50 minutes)

Abstract: Wireless data and power transmission is a necessity and a challenge in the High Energy Physics (HEP) community: a necessity because it will end up with the cabling and will accelerate the triggering process, a challenge because it requires high rate data transmission, especially in the tracker detector region (close to the interaction point between the two beams of particles) of the present and future detectors. Millimetre waves for wireless communication seem a good candidate as it allows large bandwidth however, it imposes some constraints.
The WADAPT (Wireless Allowing Data and Power Transfer) collaboration started a R&D program with different laboratories around the world. The main results of this collaboration will be presented as well as the present and future studies.

Lecturer: Dr Yan Benhammou is a researcher at the Tel Aviv University. He mainly worked in CMS and ATLAS, the two largest experiments at the Large Hadron Collider (LHC) at CERN on the detector development and spent time at CERN leading some ATLAS detector upgrade. In parallel, he worked on silicon and GaAs detectors and developed ultra thin sensors for forward calorimetry in future accelerators. These detectors will be used in the future LUXE (LUXE stands for Laser and XFEL experiment at DESY, using the XFEL, a 3.4 kms long X-Ray laser beam, to study Quantum Electrodynamics (QED) in the strong-field regime where QED becomes non-perturbative). In the two last years, he is also involved in the wireless transmission (see here below).(Text informed by the Lecturer).

Presenter: Dr BENHAMMOU, Yan (Tel Aviv University (IL))

Session Classification: Introduction to the Photonics World