

Avviso di Seminario

Ionizing radiations and their effects on matter

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Abstract:

A general overview on the main types and properties of ionizing radiations will be given, together with basic information on their natural and artificial sources. The effects of radiations on both organic and inorganic materials will be also described, by analyzing the different damage mechanisms occurring at the atomic scale. Finally, the use of radiations for non-destructive health monitoring of engineering materials and structures will be discussed.

About the speaker:

Dr. Murtas started his research career with the ALEPH experiment at CERN in Geneva and KLOE experiment at LNF-INFN (Frascati - Italy). He was one of the proponents of MONOLITH experiment at Gran Sasso Laboratory in 2001 for the measurement of flux asymmetry of atmospheric muon neutrinos. He was also involved in the construction of muon chambers for high particle flux around the beam pipe of LHC in the experiment of LHCb at CERN. He is a member of the UA9 collaboration for the proton beam collimation studies for SPS and LHC at CERN using channelling properties of bent crystals. In this framework he developed a Timepix based diagnostics able to measure the channelled beam properties inside the SPS beam pipe. Recently he is developing a new beam loss monitor setup for LHC using diamond sensors (DIAMONDPix). Recently, he has conceived and built at CERN the new GEMPIX detector, usable both for micro dosimetry studies and as ion beam monitor in hadrotherapy centre. In the last years, he was involved in the design and realization of a dosimetry network, for the Radio Protection group at CERN, for waist and environment radiation monitoring using the new LoRa communication standard, first installation at CERN. He has a worldwide known and appreciated expertise in the detector field. Furthermore, since the beginning of his career, he devoted successfully part of his time to educational related activities.

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