Contribution ID: 13 Type: not specified

The central role of metrology in applied nuclear physics research

Monday, 13 September 2021 14:00 (30 minutes)

The art and act of measurement lie at the very heart of the enterprise of Science. Measurement mediates between the complexity of the real universe in which we live and the idealised order of physical theory. Careful observation of nature thus plays a powerful role in the creation of all scientific knowledge, and the subsequent development of technologies. Unambiguous understanding of the quality of data from experiment, whether from the detectors located within the caverns of the Large Hadron Collider at CERN, or from a handheld radiation counter, is critical for the effective use of the data. I will argue why radiation metrology is a critical component of all applied nuclear physics research and make the case for measurement to be placed at the forefront of our laboratory-based teaching programmes.

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Session Classification: Metrology and Applications