



LECTURE SERIES

Monday, 05.04 - Fariday. 09.04 2021

Prof. Philippe Cassette

visiting professor at Sofia University "St. Kliment Ohridski", IAEA expert in the field of radionuclide metrology; Former international expert of the French Atomic Energy Commission (CEA) and Research Director at Laboratoire National Henri Becquerel (LNHB), France.

[Three lectures on metrology in radiation and measurement](#)

For the period 05-09 April 2021 Faculty of Physics organize three on-line lectures by Prof. Cassette as follows:

[April 05, 14:15](#)

Lecture 1. Metrology and international traceability in the field of radionuclide measurement. After a quick description of the international system of units (SI), the international organization of metrology will be discussed. The principles of traceability will be addressed through the international comparisons and the Système International de Référence (SIR), with details on the procedures and methods used to get the reference values and the degrees of equivalence of the national standards.

Zoom Meeting:

<https://cern.zoom.us/j/68755602349?pwd=RE4rdHhEc0hmcS9ZZUJwVitLazB2QT09>

Meeting ID:687 5560 2349

Passcode:589634

[April 07, 14:15](#)

Lecture 2. Evaluation of uncertainties in measurement.

The talk will focus on the use of the Guide for evaluation of Uncertainties in Measurement (GUM), result of an international consensus on the proper way to evaluate uncertainties. Examples will be given in the field of radionuclide metrology, including the use of Monte Carlo methods to propagate the uncertainties.

Zoom Meeting:

<https://cern.zoom.us/j/61619865061?pwd=K2tDTS9DaHBEbXQ4ZGhmTHdEc2hsQT09>

Meeting ID: 616 1986 5061

Passcode: 441079

April 09, 14:15

Lecture 3. Primary measurement methods in radionuclide metrology.

Duration of each lecture will be approximately 2:30 hours.

The talk will describe the main absolute measurement techniques and methods used to standardize the activity of radionuclides. This includes beta-gamma coincidence counting, liquid scintillation counting (TDCR method), defined solid angle alpha counting, cryogenic radon standard, length-compensated proportional counters, 4-pi gamma detector and calorimeters.

Zoom Meeting:

<https://cern.zoom.us/j/66855366085?pwd=NkFwT0RXNXpPUjNtdTduQUI0aSt4QT09>

Meeting ID: 668 5536 6085

Passcode: 583419