

How to model Measurement Activity and define Uncertainty

Speaker: Alessandro Ferrero, Politecnico di Milano



Measurement has become an important task in many critical activities. Quite often measurements are performed without completely understanding what measuring means, and, hence, without the awareness of the meaning that can be assigned to the measurement result.

This tutorial analyzes a general model for the measurement activity, from which the contributions of the different steps performed in a measurement procedure to the final uncertainty affecting the final result can be derived.

Then, the tutorial analyzes and discusses the definition of uncertainty given by the VIM and GUM, provides some examples on how uncertainty can be evaluated. The traceability concept is also briefly discussed.

About the speaker: Alessandro Ferrero (M'88–SM'96–F'99) was born in Milan, Italy, in 1954. He received his degree in electrical engineering from the Politecnico di Milano in 1978. He is Full Professor of electrical and electronic measurements at Politecnico di Milano.

His current research interests include the application of digital methods to electrical measurements, measurements on electric power systems under nonsinusoidal conditions, and metrology.

Prof. Ferrero has been the President of the IEEE Instrumentation and Measurements Society for the 2008 – 2009 term. He is the recipient of the 2006 Joseph F. Keithley IEEE Field Award for Instrumentation and Measurement. He is Foreign Member of the Class of Technical Sciences of the Royal Flemish Academy of Belgium for Science and the Arts.

