Measurement Uncertainty

Collection Editor:

Prof. Dr. Simona Salicone
Dipartimento di Elettronica, Informazione e Bioingegneria (DEIB), Politecnico di Milano, 20133 Milano, Italy

Message from the Collection Editor

Metrology is the scientific study of measurements. In our everyday life, we are constantly surrounded by measurements: From reading the time to weighing apples, we continuously measure something. However, measurements are also below objects, since, for example, the apple we buy has already been measured, before arriving to our greengrocer, to determine its caliber. In these measurements, uncertainty plays a very important rule. Metrologists know that no measurement makes sense without an associated uncertainty value. Without it, no decision can be taken; no comparisons can be made; no conformity can be assessed.

It is hence pivotal to know the meaning of measurement uncertainty, to understand the contributions to measurement uncertainty, to know how these contributions affect the final measurement uncertainty, to have a mathematical tool to represent measurement uncertainty and propagate it through the measurement procedure.

Keywords:

- Uncertainty contributions
- Systematic contributions
- Random contributions
- Probability theory
- Possibility theory
- Imprecise probabilities

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