Seminar im Rahmen des GRK 2078

Referee:	**Dr.-Ing. Karin Kniel** Physikalisch-Technische Bundesanstalt, Braunschweig, Germany
Date:	Thursday, 08.11.2018
Time:	13:00 h
Location:	Bldg. 50.36, Conference Room F4 (F 127)
Titel:	**An introduction to measurement uncertainty** Meaning - Determination methods - Examples from length metrology

Abstract

A complete measurement result consists of the measured value and its associated measurement uncertainty. Measurement uncertainty is the "non-negative parameter characterizing the dispersion of the quantity values being attributed to a measurand, based on the information used" (International Vocabulary of Metrology). It is, therefore, a quantitative measure of the quality of an individual measurement, traced to the respective SI unit.

In manufacturing technology, for example, reliable process control with a reliable assessment of good and rejected parts is only possible if the measurement uncertainty is sufficiently small compared to the required tolerance. Knowledge of the measurement uncertainty is, therefore, essential and leads to an increase in the performance and competitiveness of industrial firms by allowing cost-effective and reputation-promoting decisions to be made.

However, the determination of measurement uncertainty is usually quite complex, since many influencing factors must be considered and their effects determined. Various approaches exist for this purpose, that are also described in standards (e.g., JCGM 100, ISO 15530). In this lecture, the meaning of measurement uncertainty will be explained in detail and an overview as well as practical application examples of some methods for determining measurement uncertainty in coordinate and length metrology will be given.

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Alle Interessenten sind herzlich eingeladen.
Prof. Dr.-Ing. Thomas Böhlke