

Kolloquium der Abteilung 8
Medizinphysik und metrologische Informationstechnik

Donnerstag, 19.10.2017, 14.00 Uhr

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**“Metrological quality assurance in person-centred
healthcare and other qualitative observations”**

Abstract:

Measurements with categorical data – produced with ‘instruments’ such as questionnaires, ability tests, – in education, healthcare and so on, need metrological quality assurance. A patient expects that the quality of care will be comparable wherever and whenever care is provided, but metrological quality assurance has yet to be developed in many cases.

When seeking an increased stringency in measurement where human perception is a key factor, ensuring metrological comparability (‘traceability’) and reliably declaring measurement uncertainty when assessing patient ability, service satisfaction or material hardness are challenging. Subjective measurements are often characterised by large dispersion; the usual tools of statistics do not always work on the categorical and ordinal scales typical of such measurements; and an independent objective reality in what is being measured might be questioned.

Drawing simple analogies between engineering instruments such as thermometers and social instruments such as questionnaires merely in terms of measurement error does not go far enough when attempting to introduce metrology to qualitative observations (examinations, assessments, opinions). Modelling inferences of a measurement system where the instrument is a human being, and where the output of the instrument in response to probing an object (‘entity’) is a *performance* metric, i.e., how well the set-up performs the assessment, does appear to be a way forward. Be it decision risks arising from measurement uncertainty or responses to a cognitive test in a clinic for Alzheimer patients, a psychometric, generalised linear model can yield quantities, ‘latent’ (or ‘explanatory’) variables, – task challenge or person ability – which seem to possess quantitative characteristics akin to those of physical quantities. Metrological references for comparability via traceability and reliable estimates of uncertainty and decision risks are then in reach even for perceptive measurements. Metrological quality assurance in person-centred healthcare is being developed for sufferers in cases such as Myotonic Dystrophy and Alzheimer’s disease, as studied in the EMPIR HLT04 NeuroMet project

Ort:

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Zu diesem Kolloquium sind alle Interessenten herzlich eingeladen!

Verteiler:

P, VP, MP, PSt, AL 3, AL 6, AL 7, Z.15, PR-IB, Wache, IB.TP (Mit Bitte um Bereitstellung der Technik)