Einladung

Im Seminar *Datenanalyse und Modellbildung* spricht am

Freitag, den 14. Juli 2017, um 12 Uhr

in der Eckerstr.1, Raum 404, 4.OG

Dr. Amke Caliebe

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über das Thema:

Forensic DNA Phenotyping

Abstract:

Forensic DNA Phenotyping (FDP) is a relatively new development in the field of forensic genetics. It aims at predicting selected so-called externally visible characteristics (EVCs) of a trace donor from their DNA as left behind at the crime scene. The best results for FDP were achieved for eye colour where the IrisPlex DNA test system was developed (Walsh et al. 2011, which includes six SNPs in six different genes, and was found to obtain relatively high levels of prediction. The second best predictable EVC after eye colour is hair colour. In the first part of this talk, results of a study investigating the prediction of the pigmentation phenotypes eye, hair and skin colour in a Northern German population will be presented (Caliebe et al. 2016). With this study, we aimed at answering the following research questions: (1) do existing models allow good prediction of high-quality phenotypes in a genetically similar albeit more homogeneous population? (2) Would a model specifically set up for the more homogeneous population perform notably better than existing models? (3) Can the number of markers included in existing models be reduced without compromising their predictive capability in the more homogenous population? In the second part of the talk we differentiate FDP from trace donor identification problems. In the latter, it has become widely accepted in forensics that, owing to a lack of sensible priors, the evidential value of matching DNA profiles is most sensibly communicated in the form of a likelihood ratio (LR). This agreement is not in contradiction to the fact that the posterior odds (PO) would be the preferred basis for returning a verdict. A completely different situation holds for FDP. The statistical models underlying FDP typically yield PO for an individual possessing a certain EVC. This apparent discrepancy has led to confusion as to when LR or PO is the appropriate outcome of forensic DNA analysis to be communicated. We thus set out to clarify the distinction between LR and PO in the context of forensic DNA profiling and FDP from a statistical point of view (Caliebe et al. 2017).

Gäste sind herzlich willkommen!
gez. Prof. Pfaffelhuber