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Vortragseinladung

Montag, den 29.10.2018, 14 ct

- Thema:** "Foundations of response time measurement"
- Ort:** Universität Regensburg, VG2.39 (Vielberth-Gebäude)
- Referent:** **Prof. Dr. Matthias Gondan-Rochon,**
Institut für Psychologische Grundlagenforschung und
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Response time (RT) is one of the most important variables in psychology. In RT research and diagnostics, participants repeatedly perform a task, and the average duration between presentation of the stimulus and execution of the correct response is estimated. If incorrect responses occur, this estimation is difficult because the time between presentation of the stimulus and the execution of the correct response is not known in all task repetitions. The ad hoc solution of this problem is to determine RT solely on the basis of the correct responses, which yields an overly optimistic, and incomplete, picture of performance. In this presentation I investigate imputation methods for incorrect responses based on the two canonical response time models for two-choice decisions. In counter models with independent accumulators for the different response options, the incorrect response is masking any further accumulation of evidence for correct alternative. In contrast, random walk models (e.g., the two-barrier diffusion model) assume a single continuum of evidence that is mapped to an ordinal performance scale (fast correct < slow correct < slow error < fast error). The two model classes suggest different summary statistics for response time data (independent accumulators: Kaplan-Meier-estimator, random walk: rank-based statistics). Using simulations and validation data from a Neuropsychological test battery I investigate reliability and validity of these different performance measures and make recommendations on the treatment of contaminated data in RT research and diagnostics.