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Gastvortrag

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"eRm - an R package for extended Rasch modelling"

Within the context of IRT modeling there is still a lack of computational implementations apart from commercially available special-purpose software. Several solitary routines have been published but there is no tool that allows for computing the various models in an integrative manner. We propose the R package eRm (extended Rasch modeling) for computing Rasch models and several extensions. The main characteristic of IRT models, the Rasch model being the most prominent, concerns the separation of two kinds of parameters, one that describes qualities of the subject under investigation, the other relates to qualities of the situation under which the response of a subject is observed. Using conditional maximum likelihood (CML) estimation both types of parameters may be estimated independently from each other. IRT models are well suited to cope with dichotomous and polytomous responses, where the response categories may be unordered as well as ordered. The incorporation of linear structures allows for modeling the effects of covariates and enables the analysis of repeated categorical measurements. In a current version the eRm package fits Rasch models for binary and ordinal data, the rating scale model and the partial credit model with possibly missing data. Linear reparameterizations through covariate structures allow for modeling diverse data sets including repeated measurements. We use an unitary, efficient CML approach to estimate the parameters and their standard errors. Graphical and numeric tools for assessing model, item, and person fit are provided.