

Model-Based Recursive Partitioning for Psychometric Models

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This series of three talks gives an introduction to model-based recursive partitioning with applications to Bradley-Terry and Rasch models. The first talk points out the rationale of the partitioning approach and its implementation: The basis is a parametric model, that can be fitted to data, e.g., by maximum likelihood or least squares estimation. The model is then subsequently partitioned by fitting separate sub-models to different groups of observations. The partitioned model can thus incorporate heterogeneity in the model parameters by means of splitting in relevant covariates. The second and third talk specify the application of this general approach to Bradley-Terry and Rasch models. For the Bradley-Terry model, inter-individual differences in the preferences underlying paired comparisons of a set of stimuli can be captured. For the Rasch model, differential item functioning (DIF) can be detected with this approach. Applications of the method are illustrated with our favorite data examples.