

On the Analysis of Bayesian Semiparametric IRT-type Models

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Resumen Motivated by the characteristics of two educational datasets, we study the Bayesian identification and consistency of semiparametric IRT-type models, where the uncertainty on the abilities' distribution is modeled using a prior distribution on the space of probability measures. We establish sufficient conditions for the identification and consistency in the Bernoulli and Poisson versions of the Rasch model. For unbounded count (resp. binary) responses the parameters are identified when a finite (resp. infinite) number of probes are available and they are consistently estimated when the number of subjects tends (resp. subjects and probes tend) to infinite. The implications of the sufficient identification restrictions are evaluated using simulated data.