

# LATENT TRANSITION REGRESSION FOR MIXED OUTCOMES WITH DIFFERENTIAL MEASUREMENT

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Quantifying health and functioning poses significant challenges in many research areas. Commonly in the social, behavioral, and health sciences, multiple response variables are measured due to the lack of an obvious single measure of the outcome of interest. Response variables may consist of both discrete and continuous outcomes measured repeatedly through time, further complicating the analytic challenges imposed by this type of data. In this talk, I will introduce a Bayesian latent transition regression approach for studying the dependence of such mixed longitudinal responses on covariates. The outcome of interest is treated as a categorical latent variable, and the observed responses are treated as surrogates, measured with error. The proposed approach directly models the relationship between the latent variable and covariates. The model accommodates a mixture of outcomes from any distribution and may be extended to cases of differential measurement and residual correlation within responses over time. The method will be exemplified with a study of chronic back pain, for which pain severity is measured with a mixture of binary responses, count data, and skewed continuous data.