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Latent drop-out based transitions in linear quantile hidden Markov models for longitudinal responses with attrition. (English) [Zbl 1414.62302](#)

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Summary: Longitudinal data are characterized by the dependence between observations from the same individual. In a regression perspective, such a dependence can be usefully ascribed to unobserved features (covariates) specific to each individual. On these grounds, random parameter models with time-constant or time-varying structure are now well established in the generalized linear model context. In the quantile regression framework, specifications based on random parameters have only recently known a flowering interest. We start from the recent proposal by *A. Farcomeni* [*Stat. Comput.* 22, No. 1, 141–152 (2012; [Zbl 1322.62206](#))] on longitudinal quantile hidden Markov models, and extend it to handle potentially informative missing data mechanisms. In particular, we focus on monotone missingness which may lead to selection bias and, therefore, to unreliable inferences on model parameters. We detail the proposed approach by re-analyzing a well known dataset on the dynamics of CD4 cell counts in HIV seroconverters and by means of a simulation study reported in the supplementary material.

MSC:

[62J02](#) General nonlinear regression

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Keywords:

quantile regression; longitudinal data; hidden Markov models; latent drop-out classes

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