Median Regression of Longitudinal Data

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Abstract: We review and compare three estimators of median regression in linear models with longitudinal data. The estimators are constructed based on well-known ideas of weighting, de-correlating, and the working assumption of independence. Both asymptotic efficiency calculations and finite-sample Monte Carlo studies are used to assess the performance of these estimators. We find that their relative performances depend on the nature of covariates. The estimator under the working assumption of independence is computationally simple and yet has good relative performance when the covariates are invariant over time or when the within-subject correlations are small. Its relative performance in finite samples is also found to be more favorable than suggested by the asymptotic comparisons.