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Variable selection in semiparametric regression analysis for longitudinal data

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Abstract In this paper, we present a variable selection procedure by using basis function approximations and a partial group SCAD penalty for semiparametric varying coefficient partially linear models with longitudinal data. With appropriate selection of the tuning parameters, we establish the oracle property of this procedure. A simulation study is undertaken to assess the finite sample performance of the proposed variable selection procedure.

Keywords Semiparametric regression model · Longitudinal data · Variable selection