|*AU*| Li, Z., Chai, G. and Xu, K.

|*TI*| **Nonlinear wavelet smoothing of error distribution in a semiparametric model**

|*AB*| Consider a semiparametric model $y_i = \mathbf{x_i}'\beta + g(t_i) + e_i,\ i = 1, 2, \cdots, n$, error e_i are i.i.d. random variables from unknown distribution $f(e)$. In this paper, we propose a nonlinear wavelet estimator $\hat{f}(e)$ of $f(e)$ based on residuals $\hat{e} = y_i - \hat{y}_i$, here restriction of uniformly continuous on $f(e)$ might be avoided. Following the way used in Hall *et al* (1995), we provide an asymptotic formula for the mean integrated squared error of $\hat{f}(e)$, some numerical examples will be given in the end of the paper.

|*KW*| wavelet, semiparametric model, nonlinear wavelet estimator, income distribution

|*LC*| C14, D31

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