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A CENTRAL LIMIT THEOREM FOR THE L_2 ERROR OF POSITIVE WAVELET DENSITY ESTIMATOR

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Abstract. The asymptotic distribution of the integrated squared error of positive wavelet density estimator is derived. It is shown that three different cases arise depending on the smoothness of the unknown density. In each case the asymptotic distribution is shown to be normal. A Martingale central limit theorem is used to prove the results.

Key words and phrases: Positive wavelet density estimator, central limit theorem, U-statistic.