1077-62-119   **Lu Lu*** (`lu.lu@uconn.edu`), University of Connecticut, Storrs Mansfield, CT 06269. *Law of the iterated logarithm for the L_2 error of the wavelet density estimator.* Preliminary report.

Let $X_1, X_2, ..., X_n$ be a sequence of i.i.d random variables with common probability density function f. Wavelet density estimation is a nonparametric way to estimate f. We establish the law of the iterated logarithm (LIL) for the L_2 error of a linear wavelet density estimator. The main tools to study kernel density estimators such as tail estimations of degenerate U-statistics and approximation by a Gaussian chaos can also be applied here due to the similarities between the two estimators. But more assumptions on the underlying density f are needed to compute the asymptotic variance. (Received July 28, 2011)