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Erratum and Addendum: Some Results on the Behavior and Estimation of the Fractal Dimensions of Distributions on Attractors[1]

C. D. Cutler[2]

The following corrections should be made:

1. On p. 682, the distinction between the smooth and semifractal cases is not quite accurate. Specifically, the smooth case arises whenever (a) $p_j = r^{-nN}$ for all j, or (b) all nonzero p_j are equal and the set remaining after the elimination of all empty subcubes is a lower-dimensional hyperplane, rather than a Cantor set.

Case (b) was not noted in the paper, but in fact provides examples of lower-dimensional smooth measures. In this case the measure m has a density g with respect to σ-Hausdorff measure on the supporting σ-dimensional hyperplane.

The semifractal case requires that all nonzero p_j be equal and that a Cantor set be obtained after elimination of all empty subcubes.

2. On p. 687, the statement that $\hat{\sigma}$ has no (finite) moments is attributed to the fact that $\bar{R}_n = 1/\hat{\sigma}$ has a Gaussian distribution. But the Gaussian is only an *approximation* to the distribution of $\bar{R}_n$ and this is not sufficient to lead to conclusions about moments. The failure of $\hat{\sigma}$ to have finite moments follows from the fact that the distribution of $R_n(X)$ has substantial mass in neighborhoods of zero. This is a direct consequence of considering the ratio of two distances in order to eliminate the local density effect.

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[2] Department of Statistics & Actuarial Science, University of Waterloo, Ontario, Canada.

The following is an addendum to Theorem B.2:

1. The hypotheses of Theorem B.2 can be weakened slightly (in a potentially useful way). Specifically, condition (B.6) can be replaced by

$$\mathrm{Cov}(Y_{n,i}/a_n,\ Y_{n,j}/a_n) = o(k_n^{-1}),$$

and there exists a value μ such that

$$|\mu_n/a_n - \mu/a_n| = o(k_n^{-1/2}) \qquad \text{(B.6*)}$$

where $\{a_n\}$ is the sequence determined in condition (B.7). Hence it is possible to restrict attention to the rescaled variables $\tilde{Y}_{n,j} = Y_{n,j}/a_n$.