CORRECTION TO "A PROPERTY OF HAUSDORFF MEASURE"

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It has been pointed out by Mr. H. D. Ursell that the sets A and B do not satisfy H.m.A $= \alpha$, h.m.B $= \beta$. The error occurs on page 496 after equation (16). This should read,

If $\lambda_r \leq d(Q) < a_{n_{r-1}}$, $r > 1$, then Q may be included in a cube Q_1 whose side-length is dQ, and

$$\sum_{\mathfrak{A}_r(Q)} H(d) < H(a_{n_r})(d(Q)N_{n_r}/a_{n_{r-1}}N_{n_{r-1}})^n((1 - r^{-2})^{-1} + 1)^n.$$

It follows that

$$\lim_{\delta\to 0}\left\{\underset{dQ\leq\delta}{\text{Upper bound}}\left\{\overline{\lim_{n\to\infty}}\sum_{\mathfrak{A}_n(Q)} H(d)/H(d(Q))\right\}\right\} \leq 2^n.$$

By the argument of Lemma 1, one may prove that if the conditions (i)–(iv) of Lemma 1 hold and for any set Q with $d(Q) > 0$,

$$\lim_{\delta\to 0}\left\{\underset{dQ\leq\delta}{\text{Upper bound}}\left\{\overline{\lim_{n\to\infty}}\sum_{\mathfrak{A}_n(Q)} R(d)/R(d(Q))\right\}\right\} \leq M \qquad (M > 1)$$

then $\alpha \geq$ h.m.P $\geq \alpha/M$.

Thus $\infty >$ H.m.B > 0, $\infty >$ h.m.A > 0.

Let U be the translation which transforms $(x_1, x_2, \cdots, x_n)$ into $(x_1 + 1, x_2, \cdots, x_n)$; let A' be the set $\sum_{n=0}^{\infty} U^n(A)$ and $A(y)$ the subset of those points of A' whose first coordinate satisfies $x_1 \leq y$. H.m.A(y) is a continuous function of y. For at least one value of y, say y_0, H.m.A$(y) = \alpha$. Define $A(y_0)$ to be A_1. Similarly define B_1. These two sets satisfy all the conditions of Theorem 2.

Mr. Ursell has also shown by a more refined argument that the condition on the measure function, "$x^n/h(x)$ is an increasing function of x," is unnecessary.

Reference

1. H. G. Eggleston, *A Property of Hausdorff Measure*, this Journal, vol. 17(1950), pp. 491–498.

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