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ADDENDUM TO "A FIXED POINT THEOREM FOR HYPERSPACES OF λ CONNECTED CONTINUA"

CHARLES L. HAGOPIAN

When defining f^* in lines 13–15 on p. 232 of [1], we must assume that the complementary domain U of $f[\mathrm{Bd}\ B]$ that contains $f[D_4]$ is unbounded. Hence it may be necessary to adjust the position of $f[D]$ in E^2. The adjustment must be made without changing the way $f[\mathrm{Bd}\ D']$ separates $f[D]$ in E^2. This can be accomplished by moving the point at infinity in the one-point compactification of E^2 to a point of $U - f[D]$. The following argument shows that $U - f[D]$ is not empty.

Let
$V = \{(x, y) | x = 6 \text{ and } 0 \leqslant y \leqslant 6\}$,
$Q_1 = \{(x, y) | 11/2 \leqslant x \leqslant 6 \text{ and } 0 \leqslant y \leqslant 6\}$, and
$Q_2 = \{(x, y) | 5 \leqslant x \leqslant 11/2 \text{ and } 0 \leqslant y \leqslant 6\}$.

Assume U is a subset of $f[D]$. It follows that $f[Q_2]$ separates $f[V]$ from $f[\mathrm{Bd}\ B]$ in E^2. To see this assume the contrary. Let A be an arc in the closure of U that goes from $f[V]$ to $f[\mathrm{Bd}\ B]$ and misses $f[Q_2]$. Since f is a $\frac{1}{2}$-map, $f[Q_1]$ and $f[\mathrm{Bd}\ B]$ are disjoint. Hence $f[Q_1]$ does not contain A. Let z be the last point of A that belongs to $f[Q_1]$. Since A is in $f[D] - f[Q_2]$, every point of A that follows z is in $f[D_2 - B]$. Hence z belongs to $f[D_2 - B]$, which contradicts the fact that f is a $\frac{1}{2}$-map. Therefore $f[Q_2]$ separates $f[V]$ from $f[\mathrm{Bd}\ B]$ in E^2.

For $i = 1, 2$, and 3, let $T_i = \{(x, y) | 5 \leqslant x \leqslant 11/2 \text{ and } 2i - 2 \leqslant y \leqslant 2i\}$. The continuum $f[Q_2]$ is the union of $H = f[T_1] \cup f[T_2]$ and $K = f[T_2] \cup f[T_3]$. Furthermore, $H \cap K$ is the continuum $f[T_2]$. It follows from Janiszewski's theorem [3, Theorem 20, p. 173] that either H or K separates $f[V]$ from $f[\mathrm{Bd}\ B]$ in E^2.

Assume without loss of generality that H separates $f[V]$ from $f[\mathrm{Bd}\ B]$ in E^2. Let $W = \{(x, y) | 1 \leqslant x \leqslant 6 \text{ and } y = 5\}$. The continuum $f[W]$ meets both $f[V]$ and $f[\mathrm{Bd}\ B]$. Since f is a $\frac{1}{2}$-map, $f[W]$ misses H. This contradicts the

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assumption that H separates $f[V]$ from $f[\mathrm{Bd}\ B]$ in E^2. It follows that $f[D]$ does not contain U.

The theorem referred to in the last sentence in the proof of Theorem 2 of [1] should be compared with an earlier theorem of W. T. Ingram [2, Theorem 5].

In the second sentence in the proof of Theorem 3 of [1], we should also refer to J. T. Rogers' theorem [4, Proposition 2.2].

References

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Department of Mathematics, California State University, Sacramento, California 95819