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A COUNTEREXAMPLE CONCERNING ALMOST CONTINUOUS FUNCTIONS[1]

LARRY L. HERRINGTON, W. N. HUNSAKER, W. F. LINDGREN,
S. A. NAIMPALLY[2]

ABSTRACT. An example is constructed of a function which is almost continuous in the sense of Singal and Singal but not in the sense of Stallings.

Let X be the set of real numbers with the topology τ consisting of the usual open sets together with the sets of the form $U \cap D$, where U is an open set in the usual topology and D the set of all irrational numbers. Let f: $[0, 1] \rightarrow (X, \tau)$ be defined by $f(x)=x$. Then f is almost continuous in the sense of Singal and Singal (and also in the sense of Husain[3]). Since the only continuous functions on $[0, 1] \rightarrow (X, \tau)$ are the constant functions (Steen and Seeback [3, p. 89]), f is not almost continuous in the sense of Stallings. This answers an open problem recently posed by Long and Carnahan [2].

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UNIVERSITY OF ARKANSAS, FAYETTEVILLE, ARKANSAS 72701

SOUTHERN ILLINOIS UNIVERSITY, CARBONDALE, ILLINOIS 62901

SLIPPERY ROCK STATE COLLEGE, SLIPPERY ROCK, PENNSYLVANIA 16057

LAKEHEAD UNIVERSITY, THUNDER BAY, ONTARIO P7B 5E1, CANADA

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[3] An almost continuous function in the sense of Husain was earlier defined by Blumberg [1].