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CONTINUOUS FUNCTIONS NEED NOT HAVE σ -POROUS GRAPHS

Porosity and σ -porosity are concepts which were first introduced in [1]. The purpose of this paper is to answer a question posed by Paul Humke; namely, do continuous real functions have σ -porous graphs? The following definitions will be needed:

- 1) A set E has porosity s at x if $\overline{\lim} r'/r = s$ where r' is the radius of the largest circle whose interior misses E and lies inside the circle of radius r centered at x .
- 2) A set E is porous if each $x \in E$ has porosity greater than zero.
- 3) A set E is σ -porous if E is the countable union of porous sets.

Another way to consider porosity is as follows:

If B is a circle, let m^*B denote the circle with the same center as B and radius m times that of B . A point $x \in E$ has porosity greater than s if and only if there are arbitrarily small circles B whose interior misses E such that x is in the interior of m^*B where $s < 1/(m + 1)$.