

# Re: Cantorian pseudomathematics

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In article <9fa5\$43f451a0\$82a1e228\$17908@xxxxxxxxxxxxxxxxxxx>, Han de Bruijn <Han.deBruijn@xxxxxxxxxxxxxxxxxxx> wrote:

Virgil wrote:

Asking whether any physically derived function is continuous at any point you have yourself just proved to be impossible to answer, so that continuity of functions is NEVER observable, and therefore must be outlawed by HdB's anti-mathematicism.

Continuity means the following: a function  $f(x)$  is continuous in a iff

$$\lim_{x \rightarrow a} f(x) = f(a)$$

This is materialized into:  $|x - a| < \delta \implies |f(x) - f(a)| < \epsilon$

So if we have a sensor that measures  $x$  within a distance  $\delta$  from  $a$ , then  $f(x)$  will be measured as within a distance  $\epsilon$  from  $f(a)$ .  $\delta$  and  $\epsilon$  are the uncertainties. What is "NEVER observable" about this?

Since the definition requires that this be so for EVERY epsilon greater than zero, it cannot be observed for epsilons too small to be observed.

The best one could possibly say is that some measured functional relation has no DETECTABLE discontinuities, which is quite a bit short of saying that it does not have any at all.

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