

compact support

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Hello All,

I'm trying to figure out what compact support is; apparently the quote below answers the question but I don't really understand it.

Why does it say the support of a function is the *closure* of the set of points in the domain where the function does not equal zero. If we just said the support of a function is the set of points in the domain where the function does not equal zero, would that be incorrect, why?

In this context, I'm not sure what closure means. The definition I of know of closure is with respect to some operation, and I don't see any operation mentioned here.

Also, I don't understand what "compact" means (there are many terms in the definition below that I don't understand) – could someone give me an intuitive description of the concept?

Any help will be appreciated.

–Richard Giuly

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Does anyone know what compact support means ?

A function has compact support if it's support is compact.

The support of a function is the closure of the set of points in the domain

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where the function does not equal zero.

A set is compact (with respect to a particular topology) if every open cover of the set has a finite subcover. In a real vector space with the topology induced by the Euclidean Metric, you can just say:

...A set is compact if it is closed and bounded.

Thus, a function has compact support if it is zero outside a bounded set.