Re: Contractible metric space

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> *That's what I had thought, but my problem is that although I can show*
h_x:
> *[0,1] −> X, h_x(t) = h(x,t) is continuous (using this definition of*
> *starlike), I cannot show h_t: X−>X, h_t(x) = h(x,t) is continuous.*
Working
> *in R^2 for instance, and considering an arc (*p), with a point x on*
this
> *arc, and a neighborhood U of x, why couldn't U intersect (no matter*
how
> *"small" U is) another arc at point y so that for some fixed t, and*
for some
> *fixed e>0, abs(h_t(y)−h_t(x))>e (i.e h_t is not continuous) ? That's*
what
> *bothers me.*

How about the following (it would seem that this can be done in R^2, but perhaps it is easier to define on the abstract level):

How about the following: in R^2, take the union of the line segment from (0,0) to (1,0); the line segments {1/n} x [1,0] for all natural numbers n, and a half−circle (or any other curve) from (0,0) to (0,1) lying in the left half plane (i.e., x < 0) apart from these two endpoints. Then it would seem that this set is "star−like" by your definition, but it is clearly not contractible.

You could assume that your space is compact and this problem would go away, but perhaps you don't want to do that.

Hope this helps,

Lasse

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