Re: Local Homeomorphisms

Source: http://sci.tech−archive.net/Archive/sci.math/2008−04/msg03640.html

---

- *From*: Jannick Asmus <jannick.news@xxxxxx>
- *Date*: Sun, 20 Apr 2008 11:12:38 +0200

On 20.04.2008 10:48, William Elliot wrote:

> On Fri, 18 Apr 2008, Jannick Asmus wrote:
>
>> On 18.04.2008 12:13, William Elliot wrote:
>
> What's the trace topology?

.... the induced topology on a subset, cf., e.g., http://en.wikipedia.org/wiki/Subspace_topology.

Google might become your friend one day. ;)

>>> Let f:X −> Y be a continuous bijection, X locally compact, Y
>>> Hausdorff.
>>> Is f a local homeomorphism? Well clearly for all x, some
>>> open U nhood x with U homeomorphic f(U), but is f(U)
>>> open?
>>
>> Certainly not: identity map (R,discrete topology) −> (R,norm topology).
>
> Another counter example is f:[0,1) −> S^1.

Right.

> It appears than in the notion of covering map, that the local
> homeomorphism has f(U) being open, not by the definition of
> local homeomorphism, but by the definition of covering map.
>
> In other words
> covering map −−> local homeomorphism with open local images.

This is just convention − as I said already.

> > > Some compact K with x in int K
> > > f:int K −> Y closed continuous bijection.
> > > int K homeomorphic f(int K)
> > >
> > > Why is f(int K) open, or is it?
> > >
> > > > HTH.
> > >
> > > HTH ?
> >
> > Convention − like "nhood". I do not want to argue about something like this. ;)
>
> What's the definition of HTH?

Google should become your friend.

HTH.

Best wishes,
J.
.