

Manifolds: some definitions.

An n -dimensional topological manifold M is

a Hausdorff topological space with a countable basis for the topology which is

locally homeomorphic to \mathbf{R}^n .

The last point means that for every $p \in M$ there is

an open neighborhood U containing p

an open set $U' \subseteq \mathbf{R}^n$

a continuous map $h: U \rightarrow U'$

a continuous inverse $h^{-1}: U' \rightarrow U$.

We call such an h a chart, U a chart domain.

A collection of charts $\{h_\alpha\}$ covering M (i.e. s.t. $\bigcup U_\alpha = M$) is called an atlas.