

This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on August 26, 2025 6:02:23 PM, was last modified on December 11, 2025 5:41:09 PM, and was exported on September 7, 2026 3:24:53 PM.

Local fields of characteristic 0

Definition. A *locally compact* field is referred to as a **local field**.

Proposition: Any locally compact field of characteristic 0 is isomorphic to $\mathbb{R}$, $\mathbb{C}$ or a finite extension $k \geq \mathbb{Q}_{\hat{p}}$

We have

- absolute value $|\cdot|_k$
 - $\mathfrak{o}_k := \{x \in k \mid |x|_k \leq 1\}$
is the unique maximal compact subring of k
- Haar measure μ_k

Current note has 0 direct children and 0 total descendants.

- [structures based on sets](#)
 - [Topological spaces](#)
 - [Local fields of characteristic 0](#)

And it has 29 siblings.

- [structures based on sets](#)
 - [Topological spaces](#)
 - [Group action on topological spaces](#)
 - [Discrete subgroup acting on coset space](#)
 - [Basis and subbasis for a topology](#)
 - [Principal \$G\$ -bundles over topological spaces](#)

$$G \curvearrowright P \rightarrow X$$
 - [Vector bundles over topological spaces](#)
 - [Closure of a subset of topological space](#)
 - [Locally compact and 2-countable Hausdorff topological spaces are paracompact with countable refinement](#)
 - [Covering dimension of topological spaces](#)
 - $\text{EndTop}(X, Y)$
 - [Eilenberg–Steenrod functors](#)

$$(H_n : \mathbf{Top} \times \mathbf{Top} \rightarrow \mathbf{Ab}, \partial_n)$$
 - [Local fields](#)
 - [Local fields of characteristic 0](#)
 - [Topological groups](#)
 - [Continuous group action on a topological space](#)
 - [Intersection of open, dense subsets of a topological space](#)
 - [Local topological spaces](#)
 - [Covering space of a topological space](#)
 - [Borel measures on a topological space](#)
 - [Convergence for nets in a topological space](#)
 - [Loops and a open cover of a topological space](#)
 - [Paths in a topological space](#)
 - [Product of topological spaces](#)
 - [Ringed topological spaces](#)
 - [Sheaf on open sets of a topological space](#)
 - [Closed subsets of a topological space](#)
 - [Discrete subsets of topological spaces](#)
 - [Types of topological spaces](#)
 - [Locally compact Hausdorff spaces](#)
 - [Topological vector spaces over \$\mathbb{R}\$ or \$\mathbb{C}\$](#)